DOCUMENT RESUME

ED 048 243	24	TE 002 130

AUTHOR	Bateman, Donald R.; Zidonis, Frank J.
TITLE	A Grammatico-Semantic Exploration of the Problems of Sentence Formation and Interpretation in the Classroom, Volume 1. Final Report.
INSTITUTION	Ohio State Univ., Columbus. Research Foundation.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C. Bureau of Research.
BUREAU NO	BR-5-0618
PUB DATE	May 70
CONTRACT	OEC-6-10-107
NOTE	381p.; Project originally titled "Development of Composition Programs Based on Generative Grammar and Psycholinguistic Theory for Grades 7-9"
EDRS PRICE	EDRS Price MF-$0.65 HC-$13.16
DESCRIPTORS	Case (Grammar), Composition (Literary), Critical Reading, *Curriculum Development, Deep Structure, *Grammar, *Linguistics, Linguistic Theory, Literature, Poetry, Research, *Semantics, *Sentence Structure

ABSTRACT

In the introduction to this volume of a two volume document (See also TE 002 131.) written for curriculum developers, Donald Bateman identifies the recent periods in the development of linguistic thought and methodology, and presents language curriculum development as the continuing exploration of the processes of evolving linguistic structures. Thomas G. Shroyer, in "An Investigation of the Semantics of English Sentences as a Proposed Basis for Language Curriculum Materials," (1) sets forth case relations through an examination of types of sentences, (2) describes a component of a grammar designed to incorporate case relationships into a description of semantic deep structures, (3) illustrates the use of the results of the above developments in the critical reading of poetry, and (4) indicates future areas of study. Barbara Van Horn, in "An Anecdotal Account of a Classroom Investigation of the Semantics of English Sentences," indicates ways in which grammatical principles may be applied to literature, advertising, composition, and sentence structure. (JM)

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VOLUME I

FINAL REPORT

Project No. 2133
Contract No. OE-6-10-107

A GRAMMATICO-SEMANTIC EXPLORATION OF THE PROBLEMS OF SENTENCE FORMATION AND INTERPRETATION IN THE CLASSROOM

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May 1970

The research reported herein was performed pursuant to a Contract with the Office of Education, U.S. Department of Health, Education, and Welfare. The original title of this project was DEVELOPMENT OF COMPOSITION PROGRAMS BASED ON GENERATIVE GRAMMAR AND PSYCHOLINGUISTIC THEORY FOR GRADES 7-9. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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TE 002 130

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INTRODUCTION

For the last several years curriculum development has proceeded under the banner of inquiry, a somewhat mystical doctrine (1) which encourages the teacher to hide a well-known answer in the soft core of an artificial problem and beseech the student to discover it. When the student uncovers the answer, which he can do with some facility if the teacher asks the right questions, his reward lies in the rich experience of discovery, a vision of a piece of the structure of the discipline he is studying, as well as a good mark for his willingness to play the game enthusiastically. If the structure-discovery game is played in the world of grammatical systems, the student's reward may be an empty one, for he may have discovered a system, but the system may be quite unrevealing. If the game is exciting, as checkers and chess can be, at least for a while, the reward may be in the learning of the game. But is the game worth it? Is the structure empty? Is the activity relevant?

By nature, curriculum developers tend to stress the structure, talk about discovery, and neglect the student. It is no wonder that Robert Carlsen and James Crow said in their review of the Project English Curriculum Centers,

> The standard, recommended teaching strategy is the inductive method . . . which is whatever the writer wants it to be, no more and no less . . . . Almost never does inductive teaching imply an open-ended and possibly uncertain conclusion that the student may reach. It is used rather to get the student to arrive at a predetermined insight. (2, pp. 988, 990)

We are talking about a developer-trap: the pedagogue finds textbook material unsatisfactory; in the disguise of an innovator he becomes enamored of a new structure; with pedagogical urgency he sets out to write a new textbook (called a package), rushes to the classroom, presents the new material in pieces (called problems), asks questions which are thinly disguised answers (called inquiry), and through the use of sophisticated, or pseudo-sophisticated, statistical analysis demonstrates the pragmatic value of the package (called research). Unfortunately, in the words of Whitehead, "The advance which has started with the freshness of sunrise degenerates into a dull accumulation of minor feats of coordination," and the time has come again for a new package, a new sequence of "inquiry sessions," another run of the data, and "there is a new vision of the Great Beyond" (3, p. 79).

Without question this process must proceed if advance is to take place, but if advance is to be educationally significant in any universal sense, new programs must not be frozen for public comsumption, but invented out of the stream of new knowledge by particular teachers and classes. A curriculum center will fail if it becomes a producer of frozen commodities, commercially prepared and distributed, for these products are textbooks, the content already obsolete, unusable in innovative settings. Inquiry is invention, not reconstruction; its rewards are mainly uncertain conclusions and the need to continue, rarely the clever discovery of a hidden fact; it is like a constantly changing four-dimensional puzzle, never a scavenger hunt.

Does this mean that the curriculum development center must fail? That its products are frozen? That its task is ill-conceived? Perhaps, but there may be an alternative, which is to illustrate the process, to identify the continually changing stream of linguistic exploration, to characterize the variety of classroom explorations, the successes, the failures, the deadends, the breakthroughs--in short, a true account of a continuing process.

Let us try a definition: language curriculum development is the continuing exploration of the heuristic possibilities of evolving linguistic structures. A meaningful report of these varied activities and changing perspectives must illustratively describe the exploratory process one must engage in with children if he is to be a curriculum developer rather than a producer and distributor of frozen packages. At the risk of being inappropreiately personal, I will try to give some account in the following pages of what it means to experience a process, beginning at a period which preceded the formal investigation of the effect of a study of transformational grammar on the writing of ninth and tenth graders, proceeding through the early transformational period, to the current curriculum project, taking some care to identify the periods of acceptance and rejection and the activities that characterized them. This somewhat autobiographical account may serve as a map to guide one through the varied accounts of structures and experiences that comprise the major sections of this report.

The Structural Period

When one reflects on the history of a decade and the frequent attacks on the old schoolbook grammar, it is shocking to discover that there are still classrooms around the country where students are futilely attempting to learn the old definitions and apply them to exercises in which the answers can only be uncovered by the student if he can discover the hidden agenda. For example, the schoolbooks usually say that a noun is the name of a person, place, or thing. We might call this an ontological definition, which divides reality up into three categories: persons, places, and everything else, the last category sufficiently vague to render the definition useless. Nevertheless, in one textbook series the following words are identified as nouns in the teacher's answer book: *dog* (person or thing?), *thud* (thing?), *scream* (thing?), *sound* (thing?), and *half* (?). With the exception of *half*, which presents some unique problems, it turns out that the other words are called nouns because they appear in positions usually occupied by nouns, though this structural technique for identifying parts of speech is only vaguely alluded to in a footnote which says, "Any word that can be immediately preceded in a sentence by an article (*a*, *an*, or *the*) is used as a noun . . . . When an article appears in a sentence, a noun is sure to follow. Sometimes, however, an adjective will intervene before the noun: *a crooked street*."

Why would a teacher permit such foolishness to occur in the classroom? It hardly seems fair, or even humane, to make success dependent on a hidden agenda and failure a consequence of taking the definition seriously.

John Holt cites a similar situation in which a teacher tells her first graders that a consonant is "a cut-off sound, made without using the vocal chords." The students have to learn the definition and give examples of it, just as the grammar students have to learn the definition of a noun. But only half of the consonants are voiceless, so the definition is only half-right. John Holt's discussion of this situation is frightening, but undoubtedly true:

> Why do we tell children things that about one minute's thought would tell us are not true? Partly because we ourselves do not need the definition to know what a vowel (sic) is, and hence are not troubled by its inconsistency. I know a dog or a vowel when I see one, so I don't care how you define them . . . . But the main reason we are careless about what we say to children is that we think it doesn't make any

> difference. We underestimate their intellectual ability, the extent to which (at least at first) they think about what they hear, try to make sense out of it, and are baffled, upset, and frightened when they cannot. (4, p. 153)

I wonder how many children are baffled, upset, and frightened when they are penalized for being unable to make sense out of the schoolbook definition of a noun? I wondered about that a decade ago, when I stopped for a moment to examine the definition, and consigned the schoolbook to the flames and began to read Charles Fries (5), Lloyd and Warfel (6), Paul Roberts (7), Nelson Francis (8), and James Sledd (9).

If you want to define nouns semantically, or ontologically, as Silvio Ceccato has done (10), you need more than three categories--one hundred and twenty-two will do for a starter, including the names of domestic animals, wild animals, herbivorous animals, omnivorous animals, carnivorous animals, vegetables, minerals, the parts of all these, and so on, each category appearing in its own unique set of syntactic environments. In this way one can identify the ontological categories of "things-in-the-world" that we have names for, thus ultimately identifying the categories of "primary" nouns, though not derived nouns, which come into existence by the grammatical process of nominalizing certain other primary parts-of-speech. Though the study of nominalizations can be a fruitful one, it was not generally available to the teacher of English before the appearance of Robert Lees' The Grammar of English Nominalizations (11). The alternative, which was available through Fries et. al., was to exhibit the four main parts of speech (noun, adjective, verb, and adverb) in certain specified basic sentence patterns and to show how each of the sentence patterns and each of the parts of speech may be identified by its position:

D A N V D A N
1. Your new baseball broke the big window.

D A N V AV
2. Our new team went away.

D A N V A
3. That young man is tall.

The three sentences exhibit a number of basic syntactical relationships; a group of seventh-graders formulated the following:

> Words that come before nouns that can also come after "is" are called adjectives.

> Nouns follow adjectives and appear at the beginning of all three sentences.
>
> Each verb appears in a different pattern and could therefore receive a different name, if one wished to do so (transitive, intransitive, linking).
>
> Adverbs cannot be placed before nouns. "Away" could not be substituted for "new," though "tall" and "young" are interchangeable.
>
> "The," "your," "our," and "that" are all interchangeable and could therefore be given the same name (determiner: that is, a noun marker, a word that announces the forthcoming appearance of a noun).

Generalizations of this sort can be formulated by almost any seventh grader; and though they will need to be refined as more complex patterns are explored, they will, regardless of the form the student gives them, serve to introduce him to the procedures that a structural grammarian must develop to discover syntactic relationships.

It is not difficult to show that if we call the word group that begins with a determiner and ends with a noun a noun phrase (NP), then we could distinguish the syntactic unit that consists of a noun phrase preceded by a preposition a prepositional phrase. Prepositional phrases can be called "modifiers" and distinguished by position:

1. The "sentence modifier":

P D N | D A N V A
On the whole | the new workmen were efficient.

2. The "noun modifier":

D A N | P D A N | V D N
The little boy | with the red hair | is my friend.

3. The "verb modifier":

D A N V | P D N
The little mouse ran | up the clock.

The clause may be treated in a similar way. It is one of the basic sentence patterns, with or without a prepositional phrase, preceded by a word called a "clause marker" that identifies the structure. The clause appears in the different modifying positions in the same way as the prepositional phrase does:

1. As "sentence modifier":

CM	D	A	N	V	D	N		D	N
When	your	new	baseball	broke	the	window	,	our	team

V	AV
ran	away.

2. As "noun modifier":

D	A	N	CM	V	P	D	N	V	A
That	young	man	who	lives	down	the	street	is	tall.

3. As "verb modifier":

D	A	N	V	CM	D	N	V	PN	
Our	new	team	went	where	the	manager	directed	them	.

The modifying clause fits in exactly the same positions as the modifying prepositional phrase, though a complication appears. The clause, a basic sentence pattern preceded by a clause marker, may have its own modifiers, and they may be either phrases or clauses. For example, in the second sentence above "down the street" is a verb modifier inside a clause which is a noun modifier. One could easily enough add a modifier to "street" producing the following structure:

who lives down the street with the pine trees

This structure illustrates "layers of modification." The most complex sentences are actually composed of simple syntactical units. This characteristic of language structure led W. Nelson Francis to say with considerable enthusiasm:

> . . . to find that its most complex effects are produced by the multi-layered organization of relatively simple materials is to bring our thinking about language into accord with modern thought in other fields, which is more and more coming to emphasize the importance of organization -- the fact that an organized whole is truly greater than the sum of its parts. (8, p. 60)

Armed with the spirit and content of the New English, I did not find it difficult to convince the faculty of the Ohio

State University School that a modern description of the structure of English would make it possible for students to learn to manage the structures of their language with incomparable greater facility. I also hypothesized, somewhat extravagantly, that as the students gained familiarity with the structures of the language, they would be able to express more complex relationships of thought in their writing (12).

To demonstrate these claims I spent three quarters with a group of seventh graders examining the patterns of English in general and the styles of Thomas Wolfe, Hemingway, Faulkner, and Steinbeck in particular. We developed together a descriptive procedure which was derived from Nelson Francis, though it included our own creative flourishes.

After extensive classroom study, which included the daily examination of passages of prose from a variety of writers and the careful identification of the classes and sub-classes of parts of speech by the "substitution-in-frames" procedure, the students had become sufficiently sophisticated in the techniques of structural analysis to give a descriptive account of the following sentence from William Faulkner:

> They went up the road in a body, treading the moon-blanched dust in the tremulous April night murmurous with the moving of sap and the wet bursting of burgeoning leaf and bud and constant with the thin and urgent cries and the brief and fading bursts of galloping hooves. (13, pp. 44-45)

Assuming that complexity of surface structure was somehow related to complexity of experience, I commented upon this sentence as follows:

> The purely functional act is symbolized here by "They came up the road in a body." It is only when a writer wishes to explore the gestalt of the total experience that complexity of modification becomes necessary. The basic idea, "They went up the road in a body," becomes a purely presentational symbol when the writer begins the long sentence modifier "treading the moon-blanched dust of the April night . . . ." But what about the April night? It is "murmurous" and "constant," and now a second layer of modification has appeared. Each layer explores the content of the preceding modifier more fully; and as the complexity of the modification increases, we begin to see the full scene, the full set of relations, not only the purely functional act of walking up the road in a body, but every significant

> detail that makes the scene a fully presented non-discursive symbol. (12, p. 458)

In the Faulkner sentence we were able to identify five layers of modification, each layer containing everything that appeared in succeeding layers. Layer 1, therefore, included layers 2, 3, 4, and 5; layer 2, in the same way, included layers 3, 4, and 5; and so on. Our schematic representations of passages of prose showed layers of modification related to one another in a kind of Chinese-box arrangement. Finally the boxes were colored blue if they were noun modifiers and red if they were verb modifiers. Stylistics was never so colorful and the extent of the narrative or descriptive characteristics of any analyzed passage could be determined with considerable precision from at least twenty feet by observing its hue and intensity: the bluer the passage, the more descriptive; the redder the passage, the more narrative. As the students became more skillful, the color system was extended to include several other distinguishable modifying structures.

Our study included both extensive discussion of the quality of the prose we were examining and regular practice in formulating sentences of comparable quality. It seemed clear that the students had a useful technique for analyzing and talking about style. It also seemed clear to me that the students were learning to write sentences that were quite different from the sentences one customarily finds in the eighth grade.

Informal comparisons between the writing at the beginning and the end of the three-quarter period seemed to indicate that the students had developed increased sensitivity to sentencehood. For example, one student wrote the following sentence at the beginning: "At night when I go to bed I can hear the noise from a train far away, an airplane going past, from the next room I can hear daddy snoring." The details remain separate, never achieving the organicity of an explicitly formulated syntactic structure. A year later the same student produced the following sentence: "Delicate branches from the high brush along the creek arched over the pathway, their fragile yellow blossoms catching the first slant ray of the sun." Another student was able to construct this rather complicated sentence: "As they packed along the narrow trail cut in the ice they felt as though they were suspended by strings between the crevasse-scarred, boulder-strewn glacier and the high, fine, white knife ridge with its cloud banners and vertical cuts, sharply marked against the blue back." Only a year before the same student had written this sentence: "Still very high above us stood the Grand Teton where we were to go the next day and across from that the Middle Teton which the sun made look a deep orange."

There are extensive examples in this informal study of increased stylistic sophistication, suggesting to the teacher, though not to the statistics-oriented researcher, that a systematic and coherent study of syntactic structure accompanied by regular writing assignments will help students learn to write better. It would clearly be impossible to know whether these students learned to write with greater sophistication because of maturation, their knowledge of surface structure stylistics, their enthusiastic inventiveness, self-fulfilling prophecies, or some combination of these factors. But perhaps it doesn't matter: they were involved in a process which required them to identify differences in the way classes of words may be used, to see relationships between sentence parts, to compare stylistic differences, to extend their own stylistic range, to develop with some precision a vocabulary for talking about language, and consequently to bring to the conscious level their intuitive knowledge of language.

The important thing about this three-quarter investigation of style was not that it was only subjectively evaluated but that its content was invented by a teacher and a class. Though the terminology generally fell within the grammatical tradition, it was quite acceptable, in fact often necessary, to invent new terms as well as new procedures of analysis as the study continued. Since we were not following the prescriptions of a curriculum package, we were not restricted to a frozen structure, but were able to develop a dynamic system that could adapt itself to new structures as we discovered them. However, the pattern approach as it is presented in the textbooks leads one to look for a specific number of basic sentence patterns (three in Fries, ten in Lloyd and Warfel, and so on), which is a way to close off investigation before it begins, since the exercises in a package limits one to the patterns described in the text. In other words, packaged grammars tend to provide the student with a description of just those sentences that are used as examples. If you start with a package it is almost impossible to investigate the varied sentences that appear in a Hemingway or Faulkner or Steinbeck. For finally language is considerably more complex than the pattern approach would lead one to believe. Complex sentences are not built from simple sentences; there are not just ten basic sentence patterns. No writer begins with a basic sentence pattern which he gradually expands into a complex pattern by adding phrases and clauses. The whole process is much more complex and once one has exhausted the heuristic possibilities of describing the surface structure differences in the styles of the great writers the whole descriptive process becomes, as Whitehead says, "the dull accumulation of minor feats of coordination" (3, p. 79). A beautifully colored descriptive passage from Spotted Horses (13) with the words properly labeled and the modifiers properly boxed may impressively exceed anything the old schoolbook can provide, but finally there is a limit to the passages one can color and the stylistic comparisons one can make, and what was once inventive, dynamic, and fresh becomes routine and dull. Whitehead describes the process:

> It is true that advance is partly the gathering of details into assigned patterns. This is the safe advance of dogmatic spirits, fearful of folly. But history discloses another type of progress, namely the introduction of novelty of pattern into conceptual experience. There is a new vision of the Great Beyond. (3, p. 79)

The First Transformational Period

Noam Chomsky's Syntactic Structures (14) revolutionized grammatical inquiry and a little later Robert Lees' The Grammar of English Nominalizations (11) provided us with an illustration of an explicit transformational generative grammar. The structural approach to the study of sentences as it was exemplified in Roberts' Patterns of English (7) and a variety of other texts provided the student with a procedure for labeling the parts of speech of existing well-formed sentences, but it did not tell him anything about how sentences are formed. The formula $D + N + V_{tr} + D + N$ may be appropriately assigned to such sentences as The dog bit the cat but it says nothing at all about co-occurrence restrictions that are sufficiently extensive and complex to guarantee that almost any random selection of two nouns and a transitive verb will be semantically incompatible. The following groups of nouns and verbs selected randomly from the dictionary will illustrate this point:

The facade litigated the oxtail.
The pimento inactivated the complication.
The caution wronged the shore.
The morphology gagged the duck.

Furthermore, since writers do not begin with a basic sentence pattern and expand it into a complex pattern by adding phrases and clauses, to recommend to a student that interesting and complex sentences are formed this way could be nothing but misleading, if not damaging. It is clear that students can learn to apply the analytical procedures of structural grammar rather easily and that the study of style is a reasonably impressive accomplishment for an interested group of seventh graders. However, the pattern approach is essentially wrong and any sentence formation benefits would have to have come indirectly as a consequence of attending self-consciously to the various complex sentence patterns of the selected samples of writing from contemporary novelists.

Sentence formation is quite unrelated to the operational principles that guide structural grammarians. It seems more likely that sentence formation is an interaction between some sort of mental activity and a generative grammatical device that gives unique linguistic form to each unique mental event. In this view a grammarian's task is to give an explicit account of the generative process that yields a never-ending stream of unique utterances.

It is precisely this task that generative grammarians have set for themselves. It is said that a generative grammar may be thought of as a model of the device in the native speaker's head that makes it possible for him to produce sentences of the language. The problem of trying to understand the nature of this device would seem to be similar to the problem of trying to understand the behavior of the hypothetical particles inside the atom. One cannot directly observe an atom; neither can one observe the device inside the native speaker's head. Yet, in both cases, a theory can be developed based on a finite number of observations that will not only organize the data but predict the occurrence of new phenomena.

When Chomsky says that a grammar is "a device that generates all of the grammatical sequences of [a language] and none of the ungrammatical ones," (14, p. 13) he is talking about a theoretical model of the native speaker's capacity for producing novel sentences. A grammar of this sort could be thought of as an automaton that could, through an ordered application of rules, produce well-formed and only well-formed sentences of the language. Whether transformational generative grammar can accomplish this feat in any adequate way has been persistently questioned, but in any event Syntactic Structures and subsequently The Grammar of English Nominalizations raised grammatical inquiry to the level of a true science with an evolving theoretical account of man's most exciting accomplishment.

A detailed study of The Grammar of English Nominalizations ultimately led to the Bateman-Zidonis study (15) in which it was determined that high school students can learn the fundamentals of transformational grammar and that a knowledge of such a grammar enables students to increase significantly the proportion of well-formed sentences they write as well as to increase the complexity of the sentences they write without sacrificing grammaticality. Questions have been raised about the methodology of this study (16), though it seems reasonable to presume on the basis of the analysis of the data that a careful and systematic study of the structure of English does increase the student's ability to form sentences with self-conscious attention to their grammaticality. John Mellon's study (16) seems to support these contentions, though he was more concerned with sentence facility than well-formedness, thus verifying statistically what was only suggested in the Bateman-Zidonis study.

Since The Grammar of English Nominalizations was the source of the grammatical materials used by the ninth and tenth graders as well as the starting point for the curriculum development activities described in this report, it will be useful to give some account of this grammar, for its ultimate failure as another dull accumulation of minor feats of coordination awakened the language curriculum developers from their dogmatic slumbers and led them step by step to increasingly revealing stages of linguistic inquiry. It is in this manner that one comes to realize that a frozen package of grammatical exercises has no heuristic potential, but is rather a record of the past, to be studied, perhaps, by educational historians eager to plot the course of pedagogical efforts to recover the English class from its medieval preoccupations. Packages, as curriculum developers are learning from the experience of a decade of curriculum development, exclude true investigation, dealing as they do with the presumed certainties of their obsolete structures, leading students to partially obscured answers, all under the guise of inquiry. A teacher who leads his students through the successive lessons of a grammatical package can never become a part of the process of never-ending visions and revisions, of successes and failures, of trials and errors that characterize the investigative enterprise.

In grammars of the Lees period the phrase structure component provided an orderly way to produce the simple, affirmative, declarative sentences (kernel sentences) of the language. It was said that a careful description of the kernel sentences of English provided all the structures needed to account for the formation of complex sentences. The phrase structure grammar (kernel grammar), therefore, had to be developed in terms of the relationships that hold between simple and complex structures. The best possible phrase structure grammar, it was said, would provide the simplest base upon which to construct the transformational rules of the grammar. In the Bateman-Zidonis study the students studied a formal set of phrase structure rules and used this knowledge of the sub-categorization of the parts of speech and the great variety of kernel sentence patterns as the background for investigating informally the transformational rules of English. The reason for treating the kernel grammar formally and the transformational rules informally was suggested by the somewhat specialized application of the grammar to the study of stylistics. It was not the aim to make transformational generative grammarians of the students, which would entail their writing generative grammars, but rather to help them become stylists who have expanded their capability of generating varied and well-formed sentences of the language.

The requirement of learning how to reconstruct the transformational history of a complex sentence, which the student must learn to do in order to describe the stylistic characteristics of a writer, is somewhat alien to generative grammars, which generate sentences, providing a description along the way, but do not analyze existing sentences. Consequently, a student must have sufficient understanding of the syntactic environments in which the numerous categories and sub-categories of words can appear to be able to reconstruct the steps through which a sentence has passed in its formation. This task can only be accomplished through the study of a carefully formulated phrase structure grammar. Furthermore, an explicit account of the kernel sentences introduces the student to many of the transformational rules since the close relationship between the simple and the complex sentence provides the basis for defining the parts of speech.

Given the innovative ideas of a generative grammar one can proceed by developing a package, as was done in the Bateman-Zidonis study and in the Mellon study, and turning it over to a teacher and a class to study as a completed document, or one can begin with a simple grammar and examine and evaluate it carefully, alert to both its accomplishments and its limits. A close look at a short sequence of mini-grammars will illustrate this latter point.

The first rule in mini-grammar #1 states that the simple declarative sentence S consists of a subject Nom and a predicate VP.

(1) S ---> Nom + VP

Rule (1) can be translated into natural language as follows: The symbol S, which stands for sentence, may be expanded into its constituent parts, which are a subject (Nom) and a predicate (VP). The arrow stands for the operation of rewriting the symbol S into its constituent parts. The term Nom suggests nominal, since other syntactical structures than nouns may appear as the subjects of sentences, and VP is short for verb phrase.

The grammar now proceeds to expand the constituent parts of Rule (1):

$$(2)\quad VP \dashrightarrow Aux \begin{Bmatrix} V_L + Adj \\ V_{int} \\ V_{tr} + Nom \end{Bmatrix} (Loc)(Tm)$$

The predicate of a simple declarative sentence may consist of a linking verb (V_L) followed by an adjective (Adj), or an intransitive verb (V_{int}, or a transitive verb (V_{tr}) followed by a Nom. The braces mean that only one of the three sub-classes of verb may be chosen. Any of the three verb phrases may contain an adverb of location and/or an adverb of time. The parentheses mean that the enclosed elements are optional. Rule (2) accounts for sentences of the following sort:

The boy was happy (at the movie) (yesterday).

The boy was singing (in the shower) (yesterday).

The boy shot a squirrel (in the park) (last Tuesday).

The grammar proceeds to expand the constituent parts of Rule (2):

$$(3)\quad Aux \dashrightarrow Tns \ldots$$

$$(4)\quad Tns \dashrightarrow \begin{Bmatrix} Pres \\ Past \end{Bmatrix}$$

The auxiliary verb (Aux) consists of tense (Tns) and other optional elements (. . .) not specified in this mini-grammar. Tense is either present (pres) or past (past). Rules (5)-(7) conclude the expansion of the constituent parts of Rule (1), begun with Rule (2):

$$(5)\quad Nom \dashrightarrow NP + N^{\circ}$$

$$(6)\quad NP \dashrightarrow (D)\ N$$

$$(7)\quad N^{\circ} \dashrightarrow \begin{Bmatrix} Sg \\ Pl \end{Bmatrix}$$

The nominal (Nom) consists of a noun phrase (NP) and number (N°), which is either singular (Sg) or plural (Pl). Rules (8)-(14) introduce lexical items:

(8) D ---> a, an, the, his, her, my, your, our, . . .

(9) N ---> boy, girl, tree, dog, . . .

(10) V_{int} ---> sing, run, stand, bark, look, . . .

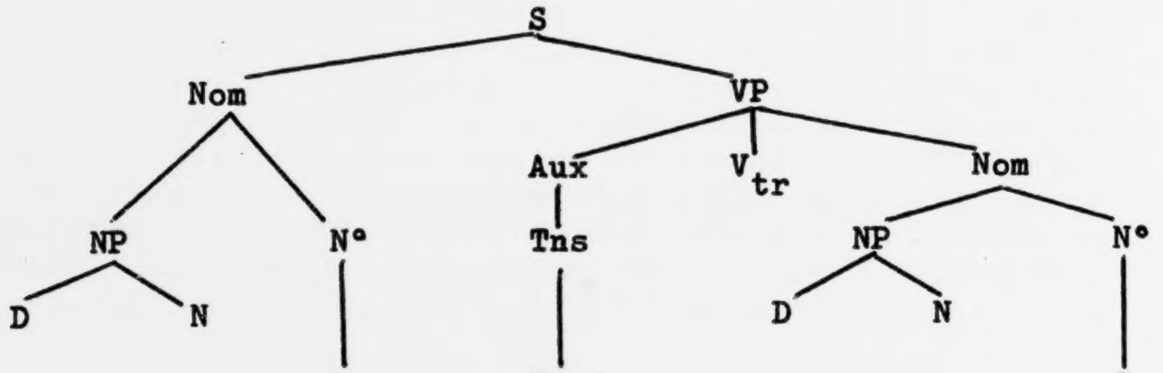
(11) V_L ---> seem, feel, grow, . . .

(12) V_{tr} ---> admire, surprise, paint, . . .

(13) Loc ---> here, there, in the house, on the corner, . . .

(14) Tm ---> now, then, yesterday, tomorrow, Tuesday, . . .

If the rules of a generative grammar are applied in order it is claimed that the end product will be a tree diagram providing us with the structural description of a well-formed sentence. Our mini-grammar can be put to the test: if it produces only deep structural descriptions of well-formed sentences, it is an adequate grammar. Otherwise, it will need revision. If we apply Rules (1) through (7) in order the following tree diagram will be formed:



If we place lexical items in the appropriate positions, we end up with the following strings:

The boy sg past admire the girl sg (The boy admired the girl.)
The boy sg past surprise the girl sg (The boy surprised the girl.)
The boy sg past paint the girl sg (The boy painted the girl.)
The girl sg past admire the tree sg (The girl admired the tree.)
The girl sg past surprise the tree sg (The girl surprised the tree.)

The girl sg past paint the tree sg (The girl painted the tree.)
The tree sg past admire the dog sg (The tree admired the dog.)
The tree sg past surprise the dog sg (The tree surprised the dog.)
The tree sg past paint the dog sg (The tree painted the dog.)

It seems clear that the grammar fails. Trees cannot paint dogs; girls cannot surprise trees; trees cannot admire anything; and so on. The task for the inquiring student, whether he is Robert Lees or a ninth grader, is to continue to test out the grammar until he has discovered the extent of its failures and successes. His problem, then, is to revise the grammar so that it makes fewer mistakes. Since some verbs require animate or human subjects (admire) and other verbs require animate or human objects (surprise), the mini-grammar will have to be revised to include sufficient sub-categorization for us to be able to select nouns and verbs that are grammatically compatible. Mini-grammar #1 is evidently little better than the old structural formula D + N + V_{tr} + D + N, though it is organized in such a way that we are able to identify the source of its inadequacy and to propose corrective revisions. We are able to do this because it is a generative grammar and therefore a model of sentence production. It fails to produce a high percentage of well-formed sentences and is consequently a poor model. Once we recognize that the model fails, we can raise a question about what additional knowledge we must program into the model for it to perform more like a native speaker. As students of sentence production we are now able to investigate the selectional restrictions of verbs. The consequence of such an investigation would lead us to expand the $\underline{V_{tr}}$ of Rule (2) as follows:

$$\text{(2a)}\quad V_{tr} \dashrightarrow \begin{Bmatrix} V_{t1} & [N_h \text{ — } N] \\ V_{t2} & [N \text{ — } N_h] \\ \cdots & \end{Bmatrix}$$

and the $\underline{N}$ of Rule (7):

$$\text{(7a)}\quad N \dashrightarrow \begin{Bmatrix} N_h \\ N_{in} \end{Bmatrix}$$

so that we have verbs that appear only in the environment of human subjects (V_{t1}) and verbs that appear only in the environment of human objects ($\underline{V_{t2}}$). At the same time we must distinguish human nouns (N_h) from inanimate nouns (N_{in}). Further investigation and testing would lead us to conclude that we need to distinguish animate nouns from human nouns, concrete nouns from mass nouns, masculine animate nouns from feminine animate nouns, proper nouns from common nouns, and so on. Furthermore, we would discover that there are many selectional restrictions on verbs and for each different set of selectional restrictions we would need to establish another verb sub-categorization.

This process of formulation, investigation, evaluation, and reformulation may be called inquiry as long as a teacher and his students can continue to make meaningful revisions. Revisions are meaningful when the new grammar works better and when the process of evaluation and revision yields new insights into the language. It is always the responsibility of the grammarian (student, teacher, or professional) to give explicit form to our intuitive knowledge of language. It is quite evident that mini-grammar #1 forces us to depend on intuitive knowledge at the point in the derivation when we enter the lexical rules. Only certain nouns can be paired with certain verbs. We know whether certain nouns and verbs can be paired by listening to the sentence in question to determine whether it is a well-formed sentence. If we have to use our ears to determine whether a sentence is well-formed, then the grammar has failed. Even after we have sub-categorized nouns and verbs as extensively as we can, grammars of the mini-grammar #1 type do not contain explicit directions for selecting only the lexical items that can appear meaningfully together.

The transformational component of a generative-transformational grammar also had its accomplishments and its limits. Certain transformational rules in a generative grammar describe operations that can be applied only to certain sentence types. For example, the passive transformation applies only to sentences that contain a transitive verb. Therefore, transitive verbs may be defined as verbs that have a passive form. The grammarian, then, can include verbs in the transitive section of the lexicon if they have a passive form. The rule for transforming an active transitive verb into a passive transitive verb can be formulated as follows:

Structural Description: $\underset{1}{\underline{\text{Nom}}} + \underset{2}{\underline{\text{Aux}}} + \underset{3}{\underline{\text{Vtr}}} + \underset{4}{\underline{\text{Nom}}}$

Structural Change: 4 + 2 + Be-en + 3 + by + 1

which may be applied as follows:

$\underset{1}{\underline{\text{The boy sg}}}\ \underset{2}{\underline{\text{past}}}\ \underset{3}{\underline{\text{surprise}}}\ \underset{4}{\underline{\text{the girl sg}}} \dashrightarrow$

$\underset{4}{\underline{\text{The girl sg}}}$ $\underset{2}{\underline{\text{past}}}$ be-en $\underset{3}{\underline{\text{surprise}}}$ by $\underset{1}{\underline{\text{the boy sg}}}$ (The girl was surprised by the boy.)

It is an effective rule which appropriately excludes such verbs as *have*, *weigh*, and *resemble* from the category *transitive* since they do not have passive forms. Again it is our intuition that verifies that *the boy is resembled by his mother* is not a sentence in English. At the same time this rule leads one to conclude that there are verb and preposition complexes (look at, flirt with) and verb and particle combinations (bring up, take over, put away) that have passive forms and are therefore transitives. The particle and the preposition, as Curme has observed, serve to transform words that were originally intransitives into transitives.

> The inflectional preposition is not only placed before words, but also after them in case of verbs: You can *depend upon* him. The preposition, as *upon* in this example, which once belonged to the word following it, is now felt as belonging to a preceding intransitive verb, serving as an inflectional particle with the office of converting the intransitive into a transitive. (17, p. 29)

Once it has been established that verb and preposition and verb and adverb complexes may be thought of as transitive verbs a new problem arises. A "transitive" verb is usually said to be a verb that passes the action from the agent (usually the subject) to the object and the object is defined as the noun phrase (not a prepositional phrase) that receives the action. First of all, in the case of a verb-particle complex it is difficult to tell whether the object is the receiver of the action. For example, what does it mean to say that Mary is the receiver of the action in the sentence "John thought about Mary" or even "John looked at Mary." Furthermore, if intransitive verbs are often followed by prepositional phrases, then how does one distinguish between verb-particle complexes and intransitive verbs? The problem is further complicated by the proposition that transitive verbs have passive forms. Consequently, one has to make decisions about the transitivity or intransitivity of the verbs in sentences of the following sort:

The boy is bringing up the books --->
The books are being brought up by the boy

The boy is looking at the girl --->
The girl is being looked at by the boy

The boy is living in the house on the corner --->
The house on the corner is being lived in by the boy

The children walk across the lawn --->
The lawn is walked across by the children

Do the particles up, at, in, and across serve, as Curme says, to make the verbs transitive? Or do they belong to the object, changing the noun phrase to an adverbial, locative prepositional phrase?

The upshot of all this is that the student's decision once again depends on his intuitions: if the passives cited above sound all right, then one is obligated to say that the verbs are transitive if one defines transitivity in terms of passivization. If, on the other hand, transitivity is defined semantically as action that passes from the agent to the object, then one has a difficult decision to make in respect to such verbs as look at, think about, live in, and so on. One must conclude--and students are quick to do this if given the opportunity to be thoughtful--that the definitions are once again only moderately operational. Furthermore, there is a more serious question: even if this kind of investigation is conducted in an open, thoughtful, and critical way, that is, as true inquiry, are the consequences significant? Have we discovered important principles of language? Or have we rather discovered the limitations and inadequacies of generative-transformational grammars of this period?

It seems reasonable to say that if the students in a class have had the opportunity to examine critically the descriptive capability of a system of grammar it is legitimate scientific inquiry as long as the students are learning about the problems of linguistic inquiry and the structure of language. It was evident to most of us at the curriculum center that this kind of critical examination of a grammatical system is precisely what linguists do--how else can a science develop?--but it was not evident that such investigation was leading to powerful new insights into language. One can become so immersed in the study of a model that he forgets that a model must be a model of something and the whole idea is to understand more fully how the "something" works.

One other major problem occurred during this stage of grammatical development: in spite of Chomsky's persistent disclaimers, developers of pedagogical grammars* persistently asserted that complex sentences were formed by combining kernel sentences in accordance with specified transformational rules. This mistaken conclusion led developers to design exercises of the following sort (18, p. 71):

> Exercise 26: Apply Embedding Transformation 17 to the following sets of matrix and constituent sentences below:
>
> 1. M: I remembered IT. ---->
> C: I took the test yesterday.

By studying the examples that preceded the exercises the student was able to conclude that the following complex sentence was called for: I remembered to take the test yesterday. The intention of the developers was understandable (and sincere), namely, to provide the students with practice in forming complex sentences from kernel sentences, which was originally an activity designed by structural grammar developers, though at that time the notion of transformation was not widely discussed. One could say, then, that the developers of this period had actually only re-organized the materials of the Roberts' vintage in a pseudo-transformational format and had in fact not understood the new theory at all, which had stated quite clearly that complex sentences were formed by the application of transformational rules to abstract underlying structures. It might have been pedagogically necessary to avoid the complications of The Grammar of English Nominalizations, which was a fine text for linguistics majors but not suitable for junior or senior high students, but the consequence was to violate the theory and give only a new appearance to an old matter and to leave the student with a package that was stultifying and that made true inquiry impossible.

The Second Transformational Period

The appearance of Chomsky's Aspects of the Theory of Syntax (19) revitalized the model, and though the model still had automatonistic characteristics and tended to force students and teachers into rule manipulation and automatic tree construction, there was a healthy measure of innovation and more than a little new insight into the way language works. Some of the newness was notational: selectional restrictions were discussed in terms of "features" (±human, ±animate, . . .) and the old phrase structure rules were modernized so that embedded S's, features, and some of the simple transformations (Q, Wh, passive) were introduced into the tree directly.

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*I have in mind here the following grammatical packages: Donald R. Bateman and Frank J. Zidonis, How Grammatical Sentences Are Formed, A Manual for Studying a Generative Grammar of English (18), and John C. Mellon, Transformational Sentence-Combining: A Method for Enhancing the Development of Syntactic Fluency in English Composition (16).

The first rule of one of the new phrase structure grammars developed at the curriculum center took the following shape:

(1) (WH)(Q)Nom + VP (Adv)

The introduction of WH and Q into the first phrase structure rule made it possible to produce the following string:

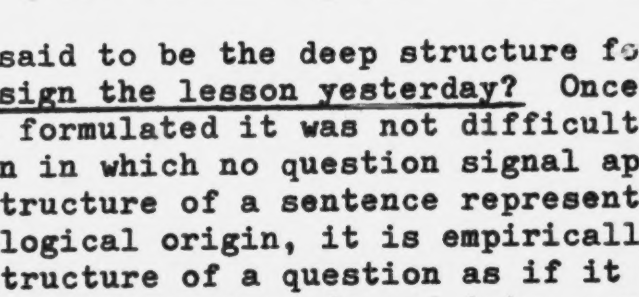
Q the teacher sg past assign the lesson sg yesterday

which was said to be the deep structure for the sentence *Did the teacher assign the lesson yesterday?* Once the new notational scheme was formulated it was not difficult to see that the earlier formulation in which no question signal appeared was wrong. If the deep structure of a sentence represents in any way at all its psychological origin, it is empirically wrong to represent the deep structure of a question as if it were declarative at first and only later transformed into a question by the speaker. New transformational rules indicated that the question transformation applied only to deep structures containing the symbol Q.

Another rule introduced a relative clause S into the Noun Phrase:

$$(14) \quad NP \dashrightarrow \begin{Bmatrix} N_{pr} \\ D + N\ (S) \end{Bmatrix}$$

which made it possible to construct trees in which relative clauses were clearly part of the NP:



Another rule introduced S into the complement:

$$\text{(7)}\quad \text{Comp} \dashrightarrow \begin{Bmatrix} \text{to + Nom} \\ \text{for + Nom} \\ \text{S} \end{Bmatrix}$$

It was now easy to show schematically why the sentence *We saw the boy mowing the lawn* may be interpreted as the answer to the question *What was the boy doing?* or *Which boy did you see?* In the first case *mowing the lawn* is a complement and part of the *verb phrase* and in the second case it is a reduced relative clause and part of the *Nom*. The passive transformation, which switches the *Nom*'s, changes the form of the main verb, and inserts *by* in the proper position, verifies this account of the ambiguity:

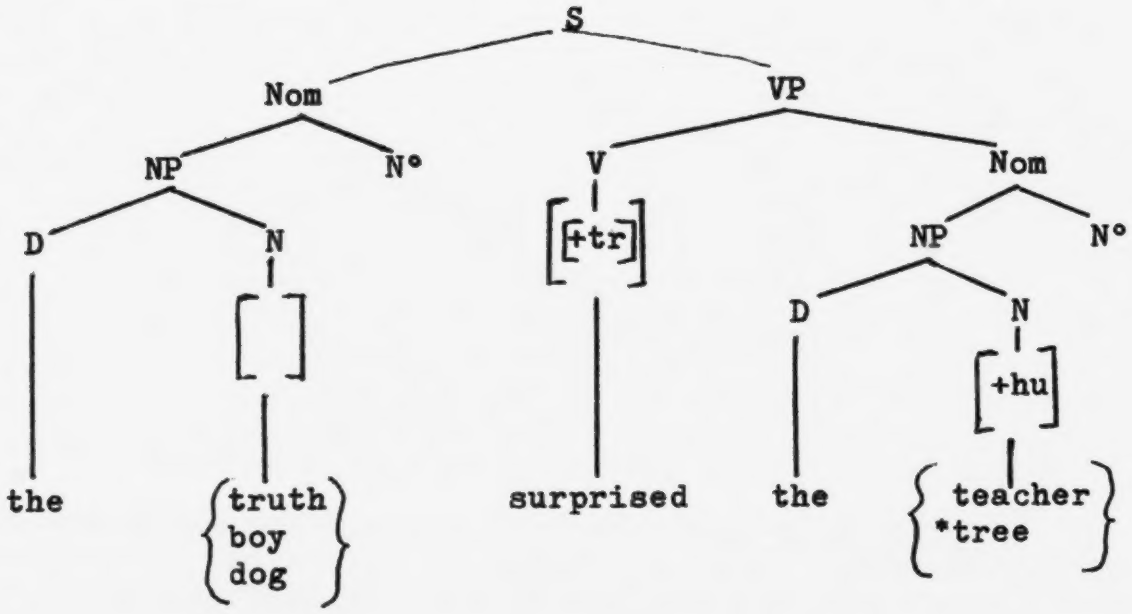
$\overset{\text{NP}}{\text{We}}\ \overset{\text{V}}{\text{saw}}$ - $\overset{\text{Comp}}{\text{mowing the lawn}}$ - $\overset{\text{NP}}{\text{the boy}}$ --->

The boy was seen mowing the lawn.

$\overset{\text{NP}}{\text{We}}\ \overset{\text{V}}{\text{saw}}\ \overset{\text{NP}}{\text{the boy (who was) mowing the lawn.}}$ --->

The boy mowing the lawn was seen by us.

A variety of demonstrations of this sort was accumulated by linguists and developers to convince teachers and students of the empirical validity and heuristic value of the new model. Many of the standard demonstrations were indeed convincing and some of them were even innovative, which is to say, not designed by Chomsky. For example, the introduction of the notion that *N*'s contained bundles of features and that verbs of a certain class could be inserted into certain slots in trees only if the feature environment matched a selectional rule associated with the verb made it possible to discuss deviancy in an interesting way for the first time. The verb *surprise* contains the *inherent feature* [+tr], which indicates that it must be followed by a noun phrase, but contrary to the old Roberts' approach a selectional rule specifies that the object must contain the feature [+hu]. If it does not, the resulting sentence will be deviant, which is to say, there will be a violation of a grammatical requirement in the deep structure of the sentence. The verb *surprise* may be used grammatically in the following deep structure:



There are no restrictions on the subject Nom: anything can surprise one; but the object Nom must be human.*

It is not immediately clear whether co-occurrence is a grammatical, a semantic, or an ontological matter, but regardless of this problem there is little question about convenience of the notational system. Furthermore, once one has begun to explore co-occurrence or selectional restriction in terms of feature distribution, the new notational system can be used to explain how we are able to understand metaphorical expressions such as *John swallowed his pride*. *Pride* could be said to have the feature [+abstract] and *swallow* could be said to have the features [+transitive] and [+physical action]. Verbs in this class select objects with the feature [+ concrete] (perhaps even [+edible]). The following tree will illustrate this point:

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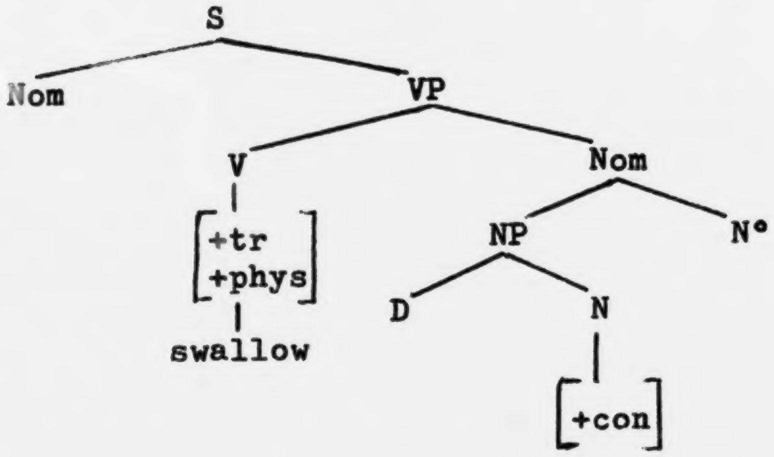
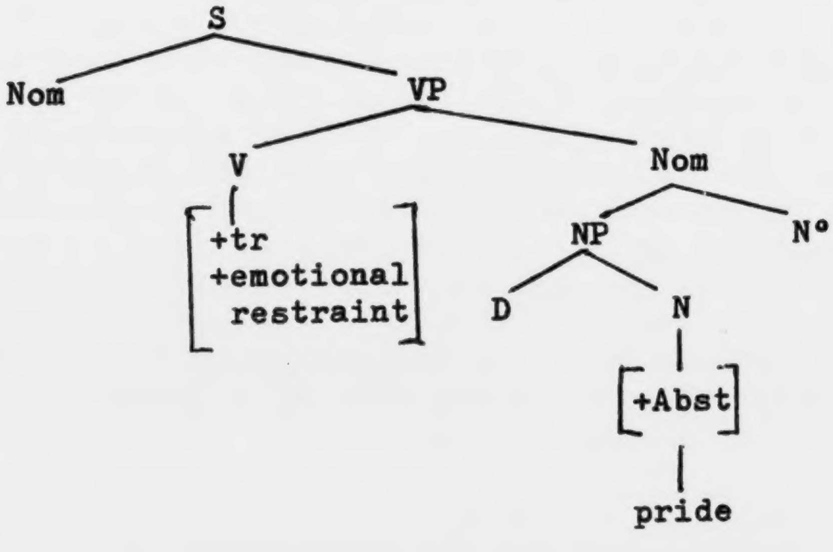
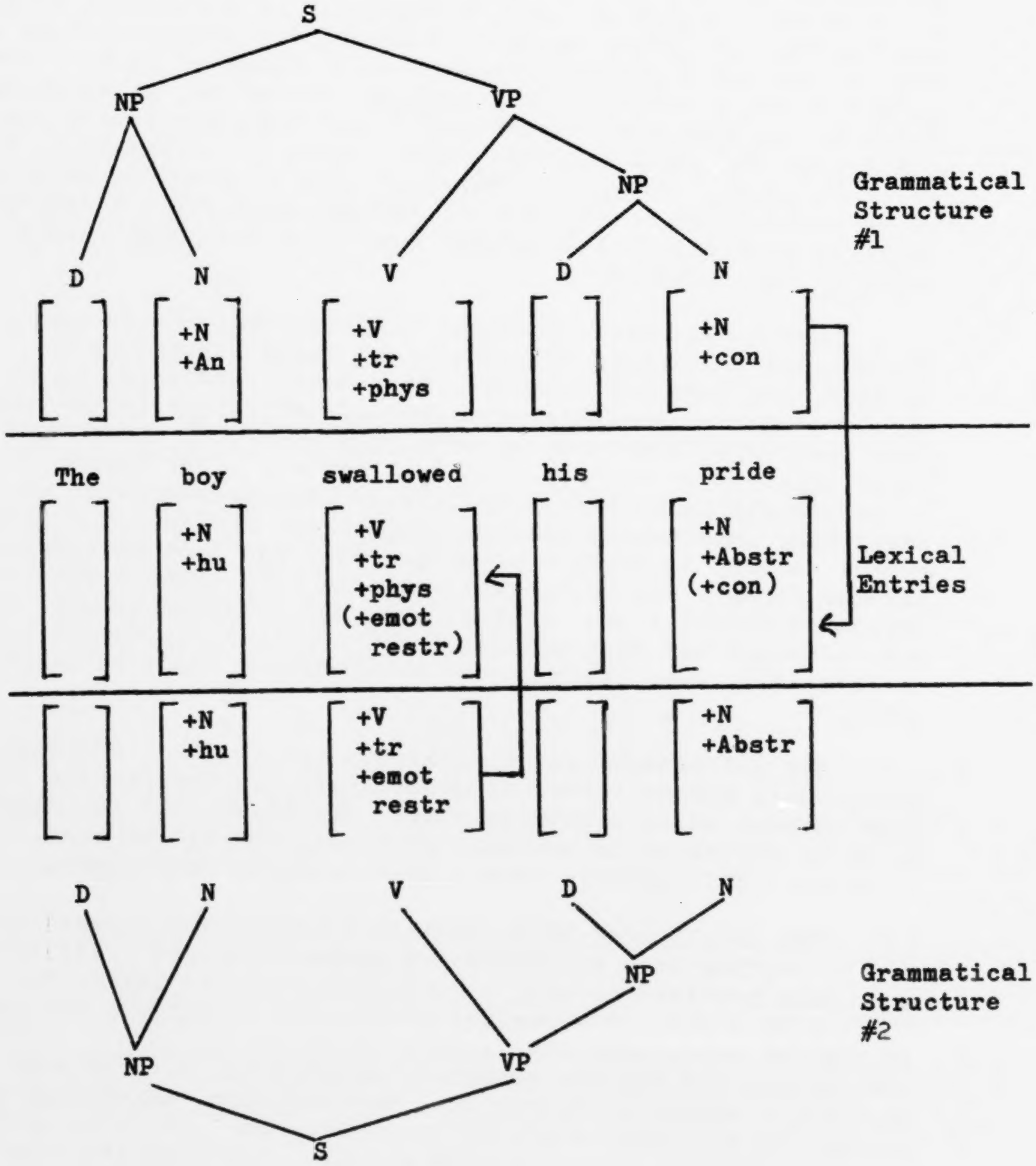
*Whether dogs can be surprised or not probably depends on the definition of "surprise." If they can, then the object Nom may also have the feature [+An], but then a new problem appears since it seems odd to say "the truth surprised Fido."



On the other hand abstract objects (or perhaps more accurately emotional objects, though at this stage of grammatical development the feature [+emot] was not included among the inventory of nominal or verbal features) such as pride can appear only in the context of verbs that contain the features [+transitive] and [+emotional restraint]:



If our grammar includes a lexicon in which the features of the entries are identified, we can select from the lexicon entries that match the grammatical requirements of the underlying deep structure, insert them in the proper slot in the deep structure, and produce a non-deviant sentence. In the first tree we can insert physical action verbs into the verb slot and concrete nouns into the object slot. In the second tree we can insert emotional restraint verbs into the verb slot and concrete nouns into the object slot. In both cases we will have grammatical sentences. But in the case of the sentence John swallowed his pride we have two co-occurrence violations: first of all swallow, a physical action verb, must occur with a concrete noun, but additionally pride may occur with an emotional restraint verb. The double feature violation can be illustrated in the following way:


S
NP
VP
NP
D
N
V
D
N
+N
+An
+V
+tr
+phys
+N
+con
Grammatical Structure #1
The
boy
swallowed
his
pride
+N
+hu
+V
+tr
+phys
(+emot restr)
+N
+Abstr
(+con)
Lexical Entries
+N
+hu
+V
+tr
+emot restr
+N
+Abstr
D
N
V
D
N
NP
NP
VP
S
Grammatical Structure #2

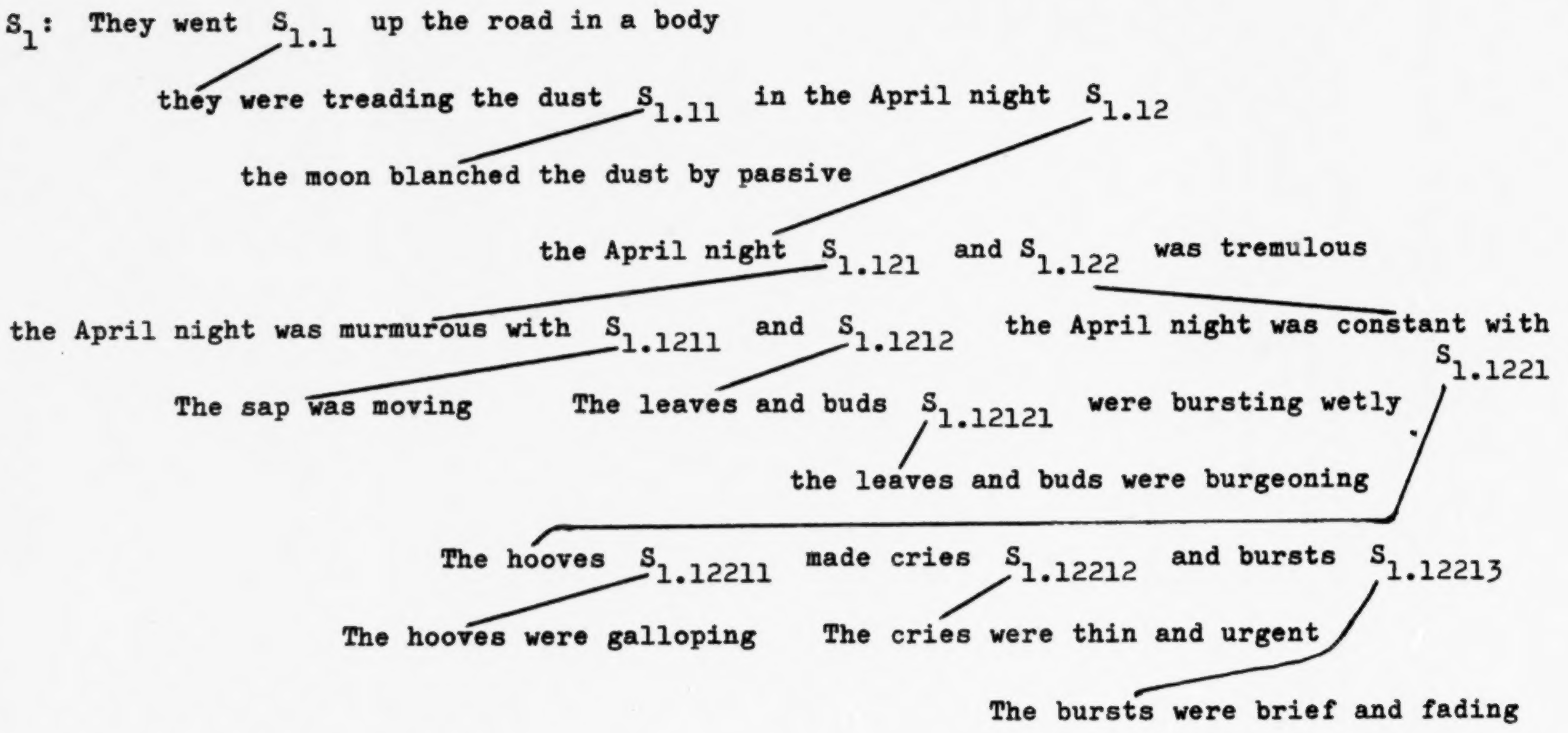
We can see that the deviancy has a complex cause: the feature [+con], which is required by the physical action verb, influences our interpretation of the lexical entry pride, causing us to think of pride at least momentarily as a concrete noun, and the feature [+emot restr] influences our interpretation of the lexical entry swallow, causing us to think of it as a substitution for a mental verb. Swallow, therefore, gives physical force to the emotional verbal action and our expectation for swallow to require a concrete object gives concreteness to the abstract pride. Metaphor, therefore, may be examined in terms of an interaction of grammatical forces, each force mingling with its counterpart and thereby enriching the total semantic force of the sentence.

When models yield innovative pedagogical adaptations, though such innovative activity might cause a linguist to shudder, teachers and students, once again, are engaging in inquiry, and new insights into language structure are acquired. Once the formal procedure is developed and fully understood it is no longer necessary to repeat it for any other reason than to explicitly illustrate a particular interpretation of an especially interesting deviant structure. Students can learn rather quickly to apply a principle that has been discovered through inquiry and given explicit form only after a persistent series of formulations, evaluations, and reformulations. Once the technique has been satisfactorily refined, it may be referred to informally when it is needed to clarify a specific semantic point.

Not all pedagogical innovations are fruitful and when they become dull accumulations of minor feats of coordination it is time to move on to something else. The history of the embedded S, as it developed in seminars with cooperating teachers, will illustrate this painful aspect of curriculum development.

The development of a convenient method for schematicizing the underlying deep structures of nominalized and relativized sentences provided us with a more sophisticated device for describing style. The earlier structural techniques for carving up surface structures into layers of modification had served its purpose but the new grammars, constructed as they were to synthesize sentences rather than analyze them, stimulated no innovative stylistic study in the classroom. In fact, with the exception of a brief period in which features and selectional rules suggested new interpretational techniques, the new grammars kept developers, teachers, and students busy trying to learn how to work the grammars. It was consequently often difficult to discover just how the new grammars could be used in the classroom. However, the earlier successful descriptions of style with a comparatively unsophisticated analytical device suggested to everyone that the new sophisticated models should yield more revealing stylistic techniques.

After a period of trial and error, which took place in a variety of classrooms from grades 4 through 16, we were able to develop a new technique for describing style in terms of deep structure. The final test of the new stylistics was to return to the old Faulkner sentence and compare the results with the earlier structural techniques for describing style. The analysis yielded the following schematization:



S_1: They went $S_{1.1}$ up the road in a body

they were treading the dust $S_{1.11}$ in the April night $S_{1.12}$

the moon blanched the dust by passive

the April night $S_{1.121}$ and $S_{1.122}$ was tremulous

the April night was murmurous with $S_{1.1211}$ and $S_{1.1212}$ the April night was constant with $S_{1.1221}$

The sap was moving

The leaves and buds $S_{1.12121}$ were bursting wetly

the leaves and buds were burgeoning

The hooves $S_{1.12211}$ made cries $S_{1.12212}$ and bursts $S_{1.12213}$

The hooves were galloping

The cries were thin and urgent

The bursts were brief and fading

(They went up the road in a body treading the moon-blanched dust in the tremulous April night murmurous with the moving of sap and the wet bursting of burgeoning leaf and bud and constant with the thin and urgent cries and the brief and fading bursts of galloping hooves.)

The same information can be organized as it is on the following page. In both cases embedded S's are identified according to the S in which they are embedded. They were treading the dust ($S_{1.1}$) is the first embedded S in S_1 (They went $S_{1.1}$ up the road in a body). Similarly, $S_{1.11}$ is the first embedded S in the first embedded S in S_1. The notational system is a simple and direct one: the depth of each embedded S can be identified immediately by counting the numbers to the right of the decimal point; the numbers of embedded S's at each level can be tabulated; a profile of frequency and depth of embedded S's can be easily formulated. Similar descriptions of other Faulkner sentences and sentences from other writers can be made and statistical comparisons of different writers can be made.

It seemed possible that the new models had pedagogical possibilities, yet they did not catch on and the general response of teachers and students was quietly negative. Once again curriculum development had degenerated into a minor feat of coordination.

The Third Transformational Period

Much of the work in transformational grammar up to this point was concerned with developing detailed phrase structure rules and the transformational rules that were needed to change deep structure strings into utterable surface structures. The most complete grammar developed at the curriculum center contained 26 phrase structure rules and 35 transformational rules. This grammar provided the framework for a set of materials developed by cooperating teachers and center personnel during an extended summer workshop early in the project. In the spirit of the times it was appropriate to regard a grammar as a machine which needed nothing more than a scanner to pick the rules that matched the structural description of a string and carry out the operations specified by the rules. Though it was largely left unspoken, it was becoming evident that the study of such a grammar, impressive as it was, required one to regard students as machine operators.

Apparently linguists themselves were becoming dissatisfied with the task of formulating sets of transformational rules for suddenly there was a bold shift from tooling up grammars to re-examining the workings of language. There had been an impressive advance, as Whitehead says, "in the use of assigned patterns for the coordination of an increased variety of detail. But the assignment of the type of pattern restricts the choice of details. In this way the infinitude of the universe is

S_1: They went $S_{1.1}$ up the road in a body

$S_{1.1}$: They were treading the dust $S_{1.11}$ in the April night $S_{1.12}$

$S_{1.11}$: The moon blanched the dust by passive

$S_{1.12}$: The April night $S_{1.121}$ and $S_{1.122}$ was tremulous

$S_{1.121}$: The April night was murmurous with $S_{1.1211}$ and $S_{1.1212}$

$S_{1.1211}$: The sap was moving

$S_{1.1212}$: The leaves and buds $S_{1.12121}$ were bursting wetly

$S_{1.12121}$: The leaves and buds were burgeoning

$S_{1.122}$: The April night was constant with $S_{1.1221}$

$S_{1.1221}$: The hooves $S_{1.12211}$ made cries $S_{1.12212}$ and bursts $S_{1.12213}$

$S_{1.12211}$: The hooves were galloping

$S_{1.12212}$: The cries were thin and urgent

$S_{1.12213}$: The bursts were brief and fading

They went up the road in a body treading the moon-blanched dust in the tremulous April night murmurous with the moving of sap and the wet bursting of burgeoning leaf and bud and constant with the thin and urgent cries and the brief and fading bursts of galloping hooves.

dismissed as irrelevant" (3, p. 79). In this case, the part of the universe that has been dismissed was the rich excitement of investigating the infinite variety of language performance in an open, investigative, creative way.

It was at this time with the assistance of The Ohio State University Department of Linguistics that we were able to escape the clutches of the machine by reading the dissertations of Barbara Hall (20), Peter Rosenbaum (21), and George Lakoff (22) and articles by Charles Fillmore (23), James McCawley (24), Uriel Weinreich (25), and Wallace Chafe (26). These documents did, in fact, introduce "novelty of pattern" into our conceptual experience. From Peter Rosenbaum (21) we discovered how to escape the detailed complexity of extensive phrase structure and transformational rules; from Barbara Hall (20) we learned how to advance from purely syntactic descriptions of such terms as "subject" and "object" to more semantically oriented investigations; from Charles Fillmore (23) we learned about case grammar; and from George Lakoff (22) we learned new ways of investigating syntactic irregularity. Most of these studies were motivated by a strong desire to escape syntactic deep structures, which were not actually deep structures at all, and to discover the nature of true deep structure, that is, semantic structure.

It would be mistaken to suggest that Chomsky had unwittingly neglected semantics and had consequently missed the whole point of language study. Quite the contrary is true. In the essay "Topics in the Theory of Generative Grammar" (27), Chomsky stated quite clearly that

> the problems of universal semantics still remain veiled in their traditional obscurity . . . . The immediate prospects for universal semantics seem much more dim than the prospects for universal phonetics, though surely this is no reason for the study to be neglected (quite the opposite conclusion should, obviously, be drawn) . . . . Let us then introduce the neutral technical notion of 'syntactic description' . . . of a sentence that uniquely determines its semantic interpretation (the latter notion being left unspecified pending further insights into semantic theory). (27, p. 5)

It was clear to the young linguists that the time had come to think about semantics, but the shift had to come gradually. First of all it was necessary to see a base grammar as a simple formulation that could be manipulated imaginatively to produce underlying structures that would extend syntactic description into the realm of meaning. At the same time, the preoccupation with the formulation of transformational rules subsided and it was possible to discuss embedding, coordination, topicalization, passivization, interrogation, and other transformational operations informally without the pressure of explicit formulation. The effect of this shift of attention was to free grammatical inquiry from the clutches of the machine and to open up new fields of investigation.

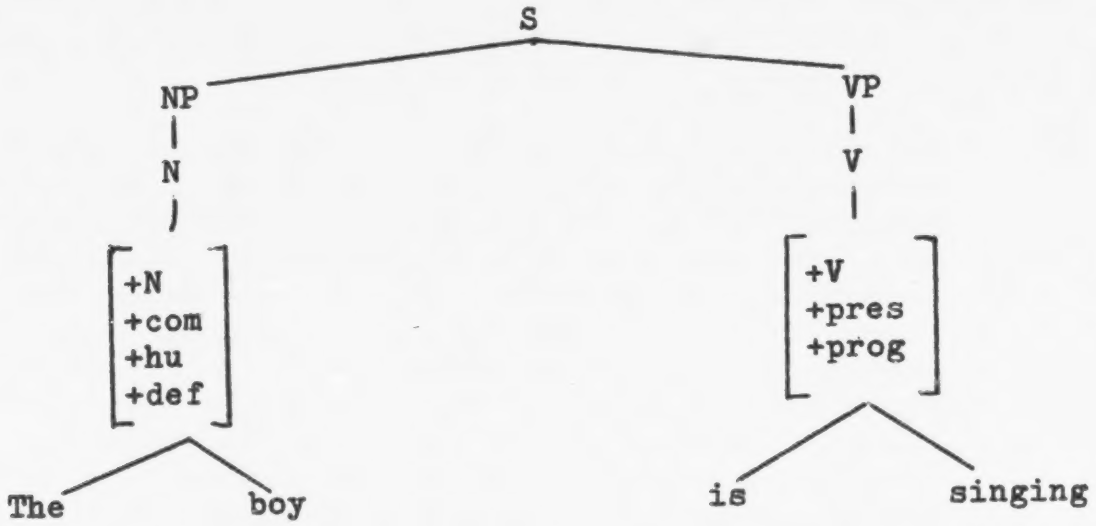
New base grammars were formulated in the following way:

(1) S ---> NP + VP

(2) VP ---> V(NP)

(3) NP ---> (N()S)

Specific transformations were referred to by name (gerundivization, infinitivization, cleft, passive, relativization, etc.) to identify grammatical processes that had been carried out in the production of particular sentences but detailed explicit descriptions were omitted. The new rules eliminated the detailed syntactic sub-categorization that was characteristic of earlier transformational grammars, introducing only nouns and verbs as syntactic categories and all other characteristics of the deep structure appeared as grammatico-semantic features placed in brackets under the two major syntactic categories N and V:



Interlocking parentheses were introduced as a new symbol in the base rules to indicate that either one symbol, the other, or both could be selected. Thus (N()S) may produce either N, N+S, or S, that is, a single noun, a noun plus relative clause, or a nominalized sentence functioning as subject or object of the sentence.

This simple set of base rules freed the young student of grammar from the tedious and mechanical task of making elaborate phrase structure grammars work by applying a long sequence of appropriately selected rules. It was now somewhat easier to contemplate the possible psychological reality of the new base rules. The creative device that enables a speaker to produce well-formed sentences must include a component that identifies the syntactic structure that will match the structure of meaning that is taking form as the sentence makes its way from feeling to utterance.

But syntax is only part of it. Somehow one must find a way to introduce appropriate semantic content into the deep structure, for at every point in the production of a sentence there must be an interaction between syntax and meaning: how else could the speaker fit the one to the other? One attempt to deal with this problem and to provide the teacher with a full account of "semantic" features was developed by Roderick Jacobs and Peter Rosenbaum (28). Unfortunately, though, the details of this package, as complete and careful as they are, do not provide the student or the teacher with an heuristic structure that leads beyond itself. Postman and Weingartner have it right when they say:

> . . . if one accepts the rather obvious fact that language is almost always produced by human beings for human purposes to share human meanings (the one exception to this is when two grammarians have a conversation), then the study of language is inseparable from the study of human situations. A language situation (i.e., a human situation) is any human event in which language is used to share meanings. (29, p. 54)

A growing awareness of the limitations of the study of syntactic regularity led us to the study of case grammar, as it is introduced by Charles Fillmore (23), and syntactic irregularity, as developed by George Lakoff (22). We began to discover ways of talking about semantically interesting sentences. Such sentences as "The boy kissed the girl," which may be ontologically interesting, though grammatically unproductive, were abandoned and more imaginative uses of language were drawn from poetry, advertising, and cartoons. We tried to make use of what we had learned about syntactic description, though we did not forget that if grammars are to be useful they must be insightful and heuristic and if composition programs are to engage students and teachers in meaningful inquiry they cannot be based on the theory that grammar is a machine and so are children.

Language study can become exciting when syntactic irregularity is investigated, when the teacher, and the student, who should both be investigators, try to explain *how sentences mean*. In Section Two of this report, Barbara Van Horn gives an anecdotal account of the investigations of a group of eighth graders who had studied a considerable amount of grammar over a two-year period and were able to draw on this knowledge to say some very insightful things about syntactically irregular expressions. For example, the following two lines from Wilfred Owen's *Arms and the Boy* were discussed at some length: "Let the boy try along that bayonet blade how cold steel is," and further on in the same poem, "His teeth seem for laughing round an apple" (30, p.262). Advertisements provided another rich source: "Haste makes sense," "Young it up with Oldsmobile," "The thirst-slaker," and "Rainfair gives you neat you never knew."

Once inquiry of this sort has become a regular part of the English class, students frequently bring unusual examples to class. One of my favorites is a cartoon which presents with appropriate illustration the following definition: *rock*, n.: to cause someone or something to sway -- by hitting them with it. Other interesting examples come from *Peanuts*: Linus says to Lucy, "Take a look at this . . . . It's a picture I drew of some cows standing in a grassture." "In a what?" Lucy says, in her usual manner. To which Linus replies: "In a grassture. That's where cows always stand . . . . You don't know anything at all about cows, do you?"

It is not easy to maintain the rigor of a discipline when you only want to investigate spectacular events, and if you are not careful, you substitute the glamor of literary criticism for the rigor and explicitness of grammatical inquiry. A sense of our obligations and the need for orderliness in the investigation of semantic structure led us to focus our attention on the study of case relationships, a fundamental, universal set of noun-verb semantic relationships, introduced by Charles Fillmore in "The Case for Case" (23).

A full account of case grammar and an application of its principles to the interpretation of poetry may be found in Section One of this report. This material, developed by Thomas Shroyer, is presented in such a way that teachers may design inquiry units for use with particular classes.

Though case study is not the final answer to the problem of developing a systematic way of exploring the semantic structure of sentences, it did serve to liberate us from the rigidity of earlier forms of transformational grammar. Once free it was easy to be inventive and to deal directly with problems of interpretation. During this latter period of the project the unpublished work of Anna Wierzbicka (31) taught us how to explore the meanings of sentences without depending on specific grammatical systems. In an unpublished paper entitled "Generative Semantics for the Classroom" I tried to present a simulation of an inquiry session which drew on the work of Anna Wierzbicka and the study of case grammar. Actually, it is something less than a simulation: it is really a monologue; but perhaps it will suggest indirectly a way in which a teacher and a group of students can explore meaning.

Generative Semantics in the Classroom

When we study the sentences of our language to discover how they are constructed, what they mean, how they are alike, how they are different, we are trying to make sense out of the most complicated thing people do. We are trying to discover the rules that govern the language game so we can understand how the game is played so we can learn to play it better. But why should we try to play the game better? Probably so we can say what we want to say, explain what we mean, give form to our ideas, understand what others say and write, tell jokes effectively, write good themes, relate our experiences and understandings interestingly and effectively, and a host of other activities that people carry on automatically from morning until night and even in their dreams.

When linguists talk about meaning and structure, they say that language has an inner and an outer form. They say that the sentences we hear and the sentences we see in books and on the chalkboard have a surface structure that is really only an abbreviation for a deep structure, which is the full meaning of the sentence. Look carefully at this sentence*:

(1) Even John is angry.

There are only four words in this sentence. If we said only John is angry, it would mean that the person named John felt that he had been mistreated in some way which caused him to become emotionally upset and irritated with someone else. But what does even mean? The dictionary gives the following definition: "though it may seem improbable." This definition seems to suggest that the sentence could be rewritten as follows:

---

*This sentence is borrowed from an unpublished paper by Anna Wierzbicka entitled "Negation - A Study in the Deep Grammar," M.I.T., March, 1967 (31).

(2) Though it may seem improbable, John is angry.

Now our four-word sentence has become an eight-word sentence!

But does our eight-word sentence really capture the meaning of our four-word sentence? Are there other circumstances that have not been directly stated that we feel to be a part of the meaning of the original sentence? "Even John is angry." Listen carefully to the sentence before you read on and try to get hold of the full meaning. Consider the following sentences:

(3) Something has happened to cause a number of people to become angry.

(4) John is one of the angry people.

(5) We did not expect John to be angry.

Now we have twenty-seven words! Does the combination of sentences (3), (4), and (5) begin to reveal the total meaning of sentence (1)? We could say that these three sentences contain a paraphrase of sentence (1). They provide us with an interpretation of sentence (1) and illustrate how the many elements of an event out in the world are packed together or telescoped into a very small package (Even John is angry) which is actually only an abbreviation (surface structure) of a very complicated meaning (deep structure).

It is the task of the student of language to discover ways of unlocking the meanings of sentences. He must learn how to look at a surface structure in such a way that he can recover the deep structure. Or to put it somewhat differently: he must discover the rules that explain how people can look at or hear surface structures like Even John is angry and understand automatically what they mean, even though a precise account of the meaning may take as many as twenty-seven words. You may remember that even the dictionary failed to provide us with a definition of even that fully explained how we understand Even John is angry.

We can pursue these ideas a little further by looking at another sentence:

(6) Helen flew to Paris.

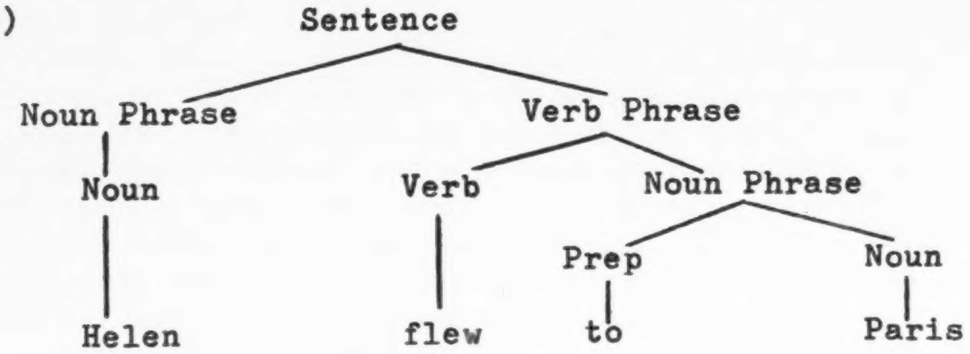
What do you think it means? What possible event could it refer to? Could it have more than one meaning? How does one unlock the meaning of a sentence? These are questions we should ask about particular sentences when we are trying to discover something about the rules of the language game. But before we try to answer any of these questions, let's find out what we know about the surface structure of our sentence.

There are different kinds of words in a language. In our sentence *Helen* is a *noun*, *flew* is a *verb*, *to* is a *preposition*, and *Paris* is a *noun*.

N V P N
(7) Helen flew to Paris.

If you have studied grammar before you may remember that *Helen* is sometimes called the *subject* of the sentence and *flew to Paris*, the *predicate*. Sometimes we say that sentences are made up of *noun phrases* and *verb phrases*. *Verb phrases* are made up of *verbs* and sometimes other *noun phrases*. *Noun phrases* always have nouns in them (*Helen*, *Paris*); sometimes the nouns are accompanied by other words that tell us something about the noun. For example, in our sentence the noun phrase *to Paris* contains a preposition that tells us that the noun *Paris* is to be regarded as a location, that is, the place to which Helen flew.

(8)



You have probably already noticed that our discussion of the parts of speech has led us away from our original question. We haven't really said anything at all about the meaning of our sentence, and since the most important thing about a sentence is that it has a meaning, you might wonder about whether there is any point in talking about nouns, verbs, and prepositions. You have probably also noticed that our diagram of the surface structure does not help us at all to understand the sentence or even to talk about the meaning of the sentence. Yet we do need to know how the language of the surface structure is related to the language of the deep structure, and perhaps, like the chemist, who talks about hydrogen and oxygen and water, or the physicist, who talks about molecules and atoms and parts of atoms, we need to be able to talk about nouns and verbs and prepositions. But more of this later.

Have you decided yet what it could mean to say *Helen flew to Paris*? What questions could we ask about the words in this sentence? For instance, who is Helen? Is she a person? Or something else? We already know that the word Helen is called a noun and you probably remember that our grammar books often say that a noun is the name of a person, place, or thing. Do you think Helen is a person? A place? A thing? Do you know what a thing is? Have you ever looked up thing in the dictionary? It's not easy to find out what a thing is. In fact, it's so difficult that an Italian linguist whose name is Silvio Ceccato decided that to say a noun is the name of a person, place, or thing is a very poor and useless definition. Consequently, he worked out a more detailed breakdown of the things that nouns name (10). For example, the names of all of the following things are nouns: flying animals, swimming animals, creeping animals, carnivora (animals that eat other animals), herbivora (animals that eat only vegetables), dangerous animals, peaceful animals, wild animals, fruit trees, transparent things, solids, liquids, foods, vegetables, parts of animals, parts of vegetables, solid things, hollow things, pointed things, and so on. In fact, Silvio Ceccato listed 142 different kinds of nouns!

But to return to our sentence. If Helen is a person, can we say that Helen can fly? Does she have wings? What do we mean, then, when we say Helen flew to Paris? Do we mean that Helen travelled to Paris in a plane? Then it must have been the plane that flew. Or perhaps we should say that someone flew the plane. Or caused the plane to fly. Maybe Helen isn't a person. What else could Helen be? Sometimes planes have names. Pilots become very fond of their planes and they give them names, usually the name of some girl they are quite fond of. Perhaps Helen is the name of a plane. Then we could say that someone flew Helen to Paris. Or maybe Helen is the name of a bird. Then we could say Helen flew to Paris and we would mean that a bird named Helen flew to Paris. But what if Helen is a person? How would we interpret our sentence then? Could we say that Helen was transported to Paris in a plane? Or that someone transported Helen to Paris in a plane?

But what about Paris? What is Paris the name of? A bird? Perhaps Helen and Paris are both birds and Helen is very fond of Paris, who is a boy bird, and she wants to be with him. Or maybe Helen and Paris are both people and Helen is in a hurry to see Paris. But surely she cannot fly. What would it mean, then, to say Helen flew to Paris? Certainly it is an exaggeration to say that Helen can fly. You have to have wings to fly and if Helen is a person she doesn't have wings. Only birds have wings. So what does it mean to talk about Helen as if she were a bird? What an odd game!

Maybe Paris is the name of a city. In that case we could say that Helen, the bird, flew to Paris, the city. Or Helen, the person, was transported to Paris, the city. Or Helen, the person, hurried off (like a bird) to Paris, the city.

We have been exploring the possible meanings a particular sentence can have. Our sentence seems to have many possible meanings, which is to say that it is ambiguous. When we try to discover the meanings a sentence can have we are beginning to investigate the deep structures of that sentence. We have been able to discover a variety of meanings that our sentence could have because we know that words like Helen can refer to a girl, a bird, or a plane and that words like Paris can refer to a boy, a bird, or a city. Of course, we know that some of the meanings of our sentence may be unlikely ones, but they could occur in the context of a story. For example, there is a very famous story about Helen of Troy, a very beautiful girl who was married to Menelaus, the King of Sparta. Unfortunately, Helen was in love with a young man whose name was Paris (according to one source). In fact, she liked Paris more than she liked Menelaus. So she eloped with Paris and Menelaus was so mad that he went after her with his army -- and that's how the Trojan War began. Thus, Helen flew to Paris in this context would mean: Helen, the person, flew (hurried like a bird) to Paris, the person she loved.

There are other ways in which utterances can be misunderstood, sometimes with catastrophic consequences. We can illustrate such a situation dramatically and that will bring our discussion of Helen flew to Paris to a climactic conclusion.

A One Act Play

Characters: a tired linguist
a tired linguist's wife

Setting: It has been a hard day at the office and the tired linguist is returning home to enjoy the comforts of his armchair and the cool taste of iced tea. He is looking forward to an intelligent conversation with his wife and pleasant activities with his numerous children.

Tired linguist (to his wife): Oh, what a day. Eight hours of it. The same thing. Over and over. The same problem. Sometimes I don't think it will ever end.

Tired linguist's wife: What was it today? The same old thing? Some silly sentence, I suppose.

Tired linguist: You won't believe it, but I've spent the whole day trying to understand Helen flew to Paris.

Tired linguist's wife (uneasily): Who in the world is Helen Flutiperis? Another one of those Greek secretaries? The whole day? Well!

Tired linguist (dozing off in his comfortable chair, the iced tea dripping slowly from his bearded chin): The pilot caused Helen Flutiperis to Zzzzzz . . . .

Grammatico-Semantic Structure

The informal exploration of the meanings of sentences can be a rich classroom activity, as Barbara Van Horn's account of her classroom in Section Two of this report documents. However, neither the formal study of syntax nor the informal study of semantics seemed sufficient. Somehow the study of language, as Emmon Bach has said, should be a study of the relationships between grammatical and semantic structure: every form has a meaning, and there is a form for every meaning (32). It is in this sense that sentence formation may be thought of as the matching of grammatical structure to semantic structure. The struggle for the writer is the discovery of this match and the task of the composition teacher, if there be such a person, is to make the composer aware of the enormous difficulty of finding the match and to provide him with some procedure for evaluating his effort.

It is this task that constituted the terminal activity of this project. Section Four of this report, "Investigation of Syntactic-Semantic Relationships in the Selected Writing of Students in Grades 4-12," by William E. Craig, presents a full account of this investigation.

Advances in biological sciences are often made through a study of pathologies, i.e., the careful investigation of physiological malfunctions. Such studies frequently lead to insights not discovered in the study of healthy organs and tissues. The approach to the study of grammatico-semantic structure in Section Four is comparable: through a careful examination of malformed student sentences, William Craig has developed a systematic account of a set of syntactic-semantic relationships derived in part from the work of Ernst Cassirer, William Stern, Anna Wierzbicka, George Curme, Hendrik Poutsma, Zeno Vendler, Etsko Kruisinga, and Otto Jespersen, whose studies* dealt primarily with the writing of adults, rather than children, and of well-formed sentences, not mal-formed sentences, in which the problems of matching grammatical structure with semantic structure are most interestingly revealed. So far as we know, there has been no other study of the language of school children that utilizes the sentences children actually write as the basis for a systematic account of the syntactic-semantic relationships they use and misuse.

---

*See Section Four in Volume II of this report for exact references.

Section Four presents a close examination of over 800 sentences from students in grades 4-12 which were written in response to the three STEP Essay tests administered to all the students in the project. Even though the sentences came from essays in which the topics were pre-determined, they provided enough examples of the mismatching of grammatical signals and semantic structure to reveal a set of semantic-syntactic relationships.

These relationships are grouped in basic families that illustrate major semantic principles; e.g., conjunction (the general semantic principle of expansion), restriction (the general semantic principle of limitation), reification (the general semantic principle of abstraction), and topicalization (the general semantic principle of emphasis). Each of these general semantic principles has a variety of specific relationships that illustrate the ways in which such relationships are expressed in syntactic forms in English. For example, the principle of conjunction (i.e., semantic expansion) is illustrated by six specific syntactic-semantic relationships: CATEGORY EXPANSION, OBJECT DESCRIPTION, ENUMERATION OF REFERENTS, TEMPORAL SEQUENCE OF ACTIONS/EVENTS, CONTRAST/OPPOSITION OF REFERENTS, and DISJUNCTION OF REFERENTS. Each of these specific syntactic-semantic relationships is defined and illustrated through specific student sentences that reveal how students in the project used and misused the grammatical signals for these relationships. For example, CATEGORY EXPANSION is illustrated by student sentences which demonstrate how the grammatical signal for this relationship, AND, has been misused by student writers.

The following excerpt from Section Four (Vol. II, pp. 88-89) will illustrate how a student's sentence violates the appropriate syntactic-semantic relationship of CATEGORY EXPANSION.

> Take for example this sentence produced by a seventh-grade student on his essay written for the Fall 1967 STEP Essay test:
>
> (15) *SHE WEIGHS SEVEN POUNDS AND EIGHT OUNCES, BLUE EYES AND BLOND HAIR.
>
> We know from our own experiences with language and the real world that the student is describing a baby girl, for we know that SEVEN POUNDS AND EIGHT OUNCES is a commonly reported weight for new-born infants.

> We gain additional support from the student's previous sentence in which he tells of the arrival of his new baby sister, although we would not have needed that information to have understood sentence (15) above. The coordinated NP's themselves--SEVEN POUNDS AND EIGHT OUNCES, BLUE EYES, BLOND HAIR--suggest a category to us immediately, for these items are those usually supplied in the information about new-born infants: their weight, their hair- and eye-color. Combined with the feminine SHE, these NP's are enough to suggest the most probable category NP to which the coordinated NP's belong: PHYSICAL ATTRIBUTES OF NEW-BORN INFANT GIRL.
>
> However, although SEVEN POUNDS AND EIGHT OUNCES, BLUE EYES, BLOND HAIR are all members of the category PHYSICAL ATTRIBUTES OF NEW-BORN INFANT GIRL (SISTER OF STUDENT), we find the student's coordination of them in sentence (15) unacceptable. Why? Because the coordinated NP's follow the verb WEIGHS, as if the baby sister not only weighs seven pounds and eight ounces but also weighs blue eyes and blond hair! As native speakers, we know that we do not ordinarily conjoin two meanings of WEIGH in the same sentence . . . . Neither do we ordinarily allow a single appearance of WEIGH to stand for both meanings in the same sentence. Therefore, the student's syntactic coordination of the NP's of weight, hair- and eye-color immediately following the verb WEIGHS confronts the reader with a category expansion that is not acceptable.

Each of the syntactic-semantic relationships making up the general semantic principle of conjunction is illustrated in this way; likewise, the syntactic-semantic relationships of the general principles of restriction, reification and topicalization are illustrated by student sentences that as clearly as possible reveal students' uses and misuses of the grammatical signals for these various semantic relationships. (See the appendix to Section Four for a list of all the syntactic-semantic relationships developed by Craig, along with an illustrative student sentence for each relationship.)

We want to stress that although this development of a systematic set of syntactic-semantic relationships was the terminal activity for this project, we feel confident that this set of syntactic-semantic relationships is just the beginning of the study of syntactic structure and semantic structure urged by Bach. Some informal investigations of the classroom use of such a set of relationships can be seen in Section Two of this report, "An Anecdotal Account of a Classroom Investigation of the Semantics of English Sentences." In the third chapter of this section, "Composition," Barbara Van Horn describes the uses her students made of the knowledge of the grammatical signals of CATEGORY EXPANSION in revising malformed sentences they had written. Obviously, such an informal application of this particular syntactic-semantic relationship can be expanded to whatever relationships a teacher and his students use, for each must look at his own writing to determine just which syntactic-semantic relationships are not being used appropriately before he applies the knowledge contained in the syntactic-semantic relationships of Section Four. Hopefully, this set will be expanded and amended by teachers and students exploring together the sentences they write.

Donald R. Bateman

REFERENCES

1. Ausubel, David P. "Learning by Discovery: Rationale and Mystique." Bulletin of the National Association of Secondary School Principals, Vol. 45, No. 269 (December 1961), pp. 18-58.

2. Carlsen, Robert G., and Crow, James. "Project English Curriculum Centers." English Journal, Vol. 56, No. 7 (October 1967).

3. Whitehead, Alfred North. Modes of Thought. New York: The Free Press, 1968.

4. Holt, John. How Children Fail. New York: Pitman Publishing Publishing Corp., 1964.

5. Fries, Charles. The Structure of English. New York: Harcourt, Brace & World, Inc., 1952.

6. Lloyd, Donald J., and Warfel, Harry R. American English in its Cultural Setting. New York: Alfred A. Knopf, Inc., 1956.

7. Roberts, Paul. Patterns of English. New York: Harcourt, Brace & World, Inc., 1956.

8. Francis, Nelson. The Structure of American English. New York: The Ronald Press, 1958.

9. Sledd, James. A Short Introduction to English Grammar. Chicago: Scott, Foresman and Co., 1959.

10. Ceccato, Silvio. Linguistic Analysis and Programming for Mechanical Translation. Technical Report No. RADC-TR-60-18. New York: Gordon and Breach, Science Publishers, 1961.

11. Lees, Robert B. The Grammar of English Nominalizations. Bloomington, Indiana: Indiana University Research Center in Anthropology, Folklore, and Linguistics, July, 1960.

12. Bateman, Donald R. "More Mature Writing Through a Better Understanding of Language Structure." *English Journal*, Vol. 50, No. 7 (October 1961), pp. 457ff.

13. Faulkner, William. *Three Famous Short Novels*. New York: Random House, Inc., 1942.

14. Chomsky, Noam. *Syntactic Structures*. The Hague: Mouton & Co., 1957.

15. Bateman, Donald R., and Zidonis, Frank J. *The Effect of a Study of Transformational Grammar on the Writing of Ninth and Tenth Graders*. National Council of Teachers of English Research Report No. 6. Champaign, Illinois: National Council of Teachers of English, 1966.

16. Mellon, John C. *Transformational Sentence-Combining: A Method for Enhancing the Development of Syntactic Fluency in English Composition*. Final Report No. 5-8418. Cambridge, Massachusetts: Office of English Education and Laboratory for Research in Instruction, Graduate School of Education, Harvard University, 1967.

17. Curme, George O. *English Grammar*. New York: Barnes & Noble, Inc., 1964.

18. Bateman, Donald R., and Zidonis, Frank J. *How Grammatical Sentences Are Formed: A Manual for Studying a Generative Grammar of English*. Report of Cooperative Research Project No. 1746. The Ohio State University Research Foundation and the U.S. Office of Education, October 1964.

19. Chomsky, Noam. *Aspects of the Theory of Syntax*. Cambridge, Massachusetts: M.I.T. Press, 1965.

20. Hall, Barbara. "Subject and Object in Modern English." Unpublished Ph.D. dissertation, M.I.T., June 1965.

21. Rosenbaum, Peter S. "The Grammar of English Predicate Complement Constructions." Unpublished Ph.D. dissertation, M.I.T., June 1965. (Later published under same title as Research Monograph No. 47, Cambridge, Massachusetts: M.I.T. Press, 1967.)

22. Lakoff, George. *On the Nature of Syntactic Irregularity*. Report No. NSF-16, Mathematical Linguistics and Automatic Translation. Cambridge, Massachusetts: Harvard University Computation Laboratory, 1965.

23. Fillmore, Charles. "The Case for Case." *Universals in Linguistic Theory*. Edited by E. Bach and R. J. Harms. New York: Holt, Rinehart and Winston, Inc., 1968.

24. McCawley, James. "The Role of Semantics in a Grammar." *Universals in Linguistic Theory*. Edited by E. Bach and R. J. Harms. New York: Holt, Rinehart and Winston, Inc., 1968.

25. Weinreich, Uriel. "On the Semantic Structure in Language." *Universals of Language*. Edited by Joseph H. Greenburg. Cambridge, Massachusetts: M.I.T. Press, 1963.

26. Chafe, Wallace. "Language as Symbolization." *Language*, Vol. 43, No. 1 (March, 1967).

27. Chomsky, Noam. "Topics in the Theory of Generative Grammar." *Current Trends in Linguistics*, Volume III. Edited by Thomas Seboek. The Hague: Mouton & Co., 1966.

28. Jacobs, Roderick A., and Rosenbaum, Peter S. *English Transformational Grammar*. Waltham, Massachusetts: Blaisdell Publishing Company, 1968.

29. Postman, Neil, and Weingartner, Charles. *Teaching as a Subversive Activity*. New York: Delacorte Press, 1969.

30. Owen, Wilfred. "Arms and the Boy." *Enjoyment of Poetry*. Edited by Max Eastman. New York: Charles Scribner's Sons, 1951.

31. Wierzbicka, Anna. "Negation -- A Study in the Deep Grammar." Unpublished dittoed document, M.I.T. Press, March, 1967 (Program for Exchange of Generative Studies).

32. Bach, Emmon. "Nouns and Noun Phrases." *Universals in Linguistic Theory*. Edited by E. Bach and R. J. Harms. New York: Holt, Rinehart, and Winston, Inc., 1968.

SECTION ONE

AN INVESTIGATION OF THE SEMANTICS OF ENGLISH SENTENCES AS A PROPOSED BASIS FOR LANGUAGE CURRICULUM MATERIALS

by

Thomas G. Shroyer

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PREFACE

The present work was written while the author was taking part in a development project supported by the United States Office of Education (Cooperative Research Project No. 2133, Contract OE-6-10-107, Development of Composition Programs Based on Generative Grammar and Psycholinguistic Theory for Grades 7-9). Part of the project's task was to determine language materials for children in grades seven through nine. Project personnel thought that even the best of current theoretical linguistics was not sufficiently adequate to be translated directly into language materials for the classroom. Specifically, while a highly articulated syntax and phonology were available, there was no comparable account of semantics, undoubtedly one of the central aspects of language. It was necessary, then, to explore the semantic structure of English prior to the development of language materials. The resulting concepts and procedures would supplement literary interpretational techniques, yield insights into student composition, and provide a relatively (linguistically) sound basis for the later formulation of language materials. The constraints imposed on this description were, therefore, the following:

1. The description must take up directly the problem of meaning (semantics).
2. The account must be open: oriented toward investigation rather than formulation.
3. The description should be based on the most semantically adequate linguistic theories and on the author's knowledge of language as a native speaker and student of linguistics.
4. The results must provide systematic insights into literary language.
5. The results must provide systematic insights into student composition.

The author believes that, although the current writing does not include illustrations which meet requirement No. 5, the system set forth potentially makes a significant contribution to a description and analysis of student composition.

I INTRODUCTION

> "No education can be adequate in which knowledge of our native language ... is false, or shallow, or trivial."[1]

> "What needs to be clearly seen...is that linguistics is essentially the quest of MEANING."[2]

> "Mastery of the fundamental ideas of a field involves not only the grasping of general principles, but also the development of an attitude toward learning and inquiry, toward guessing and hunches, toward the possibility of solving problems on one's own."[3]

There is little reason to document past failures of linguists in dealing with problems of language description or even in recognizing them. Similarly we need not relate the lack of success of educators concerned with language instruction in providing appropriate, truthful, and revealing language materials for their students. Although the full range and depth of language and its connections to psychology and philosophy were recognized and expounded in Cartesian thought in the 17th and 19th centuries, it has only been within the last decade and a half that these earlier insights and principles have motivated any further serious linguistic investigations and only within the last two years that they have influenced a few linguists to deal directly with that aspect of language which is most crucial: meaning. As a consequence, no educational materials now available manifest any of the richness and potential of rationalistic Cartesian linguistics for investigation and understanding of language and thought.

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[1] Herbert J. Muller, The Uses of English (New York: Holt, Rinehart, and Winston, Inc., 1967), p. 58.

[2] Benjamin Lee Whorf, Language, Thought, and Reality: Selected Writings of Benjamin Lee Whorf. ed. John B. Carroll (Cambridge, Mass.: M.I.T. Press, 1956), p. 73.

[3] Jerome S. Bruner, The Process of Education (Cambridge, Mass.: Harvard University Press, 1965), p. 20.

> Descartes was not primarily interested in language per se, rather, reflecting the existing unified discipline in his time of linguistics, psychology, and philosophy--the same areas which current generative grammarians, in their search for better explanations of language phenomena, find interrelated- he saw language as that function of man which was most human: that the linguistic and mental processes of man were virtually identical.[4]

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[4] Thomas G. Shroyer, "A Review of Cartesian Linguistics by Noam Chomsky" (unpublished paper, 1967).

Since it is necessary to create language materials which are not "false, or shallow, or trivial,"[5] since these materials must permit, even force, students to engage in "the quest of meaning"[6] and to develop "an attitude toward learning and inquiry,...toward the possibility of solving problems on one's own,"[7] the developer must determine the possible theoretical and methodological sources to draw from in order to achieve these goals. A Chomskian Generative-Transformational grammar might be one source of value in light of the claims that Chomsky has made concerning the place of his theory in the Cartesian tradition and his perceptive statements about language instruction in the schools. For example, he says,

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[5] Muller, The Uses of English.

> My impression is that grammar is generally taught as an essentially closed and finished system, and in a rather mechanical way.... It seems to me that a great opportunity is lost when the teaching of grammar is limited in this way. I think it is important for students to realize how little we really know about the rules that determine the relation of sound (surface structure) to meaning (deep structure) in English, about the general properties of human language,... Few students are aware of the fact that in their normal, everyday life they are consistently creating new linguistic structures that are immediately understood.... They are never

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[6] Whorf, Language, Thought, and Reality.

[7] Bruner, The Process of Education.

> brought to the realization of how amazing an accomplishment this is, and of how limited is our comprehension of what makes it possible.[8]

Yet an examination of the type of grammar put forth in works such as Chomsky's Aspects of a Theory of Syntax[9] or Jacobs and Rosenbaum's English Transformational Grammar [10] reveals them to be basically mechanical, closed systems which do not deal directly with meaning, as these criticisms of the Chomskian paradigm indicate:

> There is an uncomfortable similarity between the way that semantics has generally been treated in transformational grammar and the way that syntax was treated in the 'phonological grammar' of Trager and Smith. In either case the subject is a nebulous area which cannot be dealt with on its own ground but is accessible only through the more manageable field of syntax or phonology. This similarity is made especially clear in Katz and Fodor's dictum (1963) that 'linguistic description minus grammar equals semantics,' which in effect asserts that semantics is (by definition) the hairy mess that remains to

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[8] Noam Chomsky, "The Current Scene in Linguistics," College English, Vol. 27, No. 8 (May 1966), p. 595.

[9] Noam Chomsky, Aspects of a Theory of Syntax (Cambridge, Mass.: M.I.T. Press, 1965).

[10] R. A. Jacobs and Peter S. Rosenbaum, English Transformational Grammar (Waltham, Mass.: Blaisdell Publishing Co., 1968).

be talked about after one has finished with linguistics proper.[11]

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[11] James D. McCawley, "The Role of Semantics in a Grammar," in *Universals in Linguistic Theory*, ed. by E. Bach and R. Harms (New York: Holt, Rinehart, and Winston, Inc., 1968), p. 125.

> For the last few years transformational grammar, in the form originated by Chomsky has been making a mighty effort...towards distinguishing phenomena of deep and superficial grammar and towards constructing an explicit theory of transition 'from the depth to the surface'.
>
> However, in practice, the notion of deep structure with which transformational grammar has been working seems still very far from the logical grammar of the Cartesian linguists. In fact, even in the relatively radical version of Postal, Lakoff and Ross the s.c. deep structure looks rather like an intermediate concept, suspended half way between universal notation of the meaning and the superficialities of the form, half-syntactic, half-semantic....[12]

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[12] Anna. Wierzbicka, "Negation - A Study in the Deep Grammar," PEGS (dittoed paper, M.I.T., March, 1967), footnote 1, p. 32.

> If we regard language as an extraordinarily complex device for symbolizing human experience by vocal sound, it seems to me that we are led to a rather different perspective than was afforded..,by Chomskyan theory. [This theory] arose from a preoccupation with the symbol rather than that which is symbolized, and as a consequence distorted the real relationship between the two.[13]

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[13] Wallace L. Chafe, "Language as Symbolization," Language 43, No. 1 (March, 1967), p. 57.

> It [Chomskian deep structure] is an artificial intermediate level between the empirically discoverable 'semantic deep structure' and the observationally accessible surface structure, a level the properties of which have more to do with the methodological commitments of grammarians than with the nature of human languages.[14]

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[14] Charles J. Fillmore, "The Case for Case," in Universals in Linguistic Theory ed. E. Bach and R. Harms. (New York: Holt, Rinehart, and Winston, Inc.,1968), p. 88.

An examination of such post-Chomskian literature reveals a persistent and fairly wide-spread attempt to maintain theoretical rigor and to use the rationalistic methodology of ordinary language philosophy in an effort to deal directly with meaning. One example of this attempt is Fillmore's most complete statement of case grammar, "The Case for Case."[15]

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[15] Fillmore, "The Case for Case."

Fillmore defines case relationships as:

> ...semantically relevant syntactic relationships involving nouns and the structures that contain them.... [T]hese relationships...are in large part covert but are nevertheless empirically discoverable.... [T]hey form a specific finite set....[16]

He further points out that these covert case categories are not to be confused with historical accounts of case which were based on morphology or accidence rather than on a concept of deep structure in which syntax is central.[17] One difference between his grammar and a Chomskian grammar is revealed by his discussion of the two sentences

(1) John ruined the table
(2) John built the table

Fillmore says that the covert grammatical distinction between these two sentences is that of "affectum" versus "effectum": in (1) the table is understood to have existed prior to John 's action while in (2) the table is understood to have come into existence as a result of John's action.[18] Further, the syntactic implications of this distinction are revealed by the fact that (1) may appropriately answer the question

(3) What did John do to the table?

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[16] Fillmore, "The Case for Case," p. 5.

[17] Fillmore, "The Case for Case," pp. 2-3.

[18] Fillmore, "The Case for Case," p. 4.

while (2) may not.[19] On the other hand, a grammar such as that described in *Aspects of the Theory of Syntax*[20] would simply account for the difference between the two sentences on the basis of the difference in selectional features associated with their respective verbs: *ruin* co-occurs with a preceding NP containing the feature [-abstract], whereas *build* co-occurs with a preceding NP containing the feature [+human]. Clearly, this latter method is based only on superficial co-occurrence patterns. Thus, it appears that one important factor in the increased adequacy of Fillmore's grammar is the introduction of semantic data into the process of sentence analysis. A brief account of one perspective on the recent history of grammatical systems will illustrate the full impact of this step.

One of the first modern attempts to describe sentences in a systematic way was Immediate Constituent analysis. The application of this methodology results in the division of sentences into their various formal parts and the labeling of those parts. Thus, a sentence like

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[19] Fillmore, "The Case for Case," p. 4.

[20] Chomsky, *Aspects*.

(4) John opened the door

consists of the immediate constituents "John," a noun phrase, and "opened the door," a verb phrase. The verb phrase consists of the immediate constituents "opened," a verb, and "the door," a noun phrase. The latter noun phrase, "the door," consists of the immediate constituents "the," a determiner, and "door," a noun. The merit of this system is that it provides a consistent means for identifying parts of sentences with constituent labels. Further, it contains terms which can be used to state generalizations about English: for example, every English sentence contains a noun phrase and a verb phrase, every noun phrase contains a noun, and every verb phrase contains a verb.

Since this system is restricted to a description of sentential constituent type and order, it must fail to account for any aspect of meaning. For example, it cannot reveal the relationships between apparently quite different sentences which are nevertheless judged to be essentially synonymous by native speakers. Conversely, it will represent semantically unrelated sentences in identical fashion. For example, (5) and (6) will be identically labeled, as (7) and (8) illustrate:

(5) Harry wants the tie

(6) Hilda killed the roach

(7) $(_{S}\ (_{NP}\ (_{N}\ \text{Harry}\ )\ )\ (_{VP}\ (_{V}\ \text{wants}\ )\ (_{NP}\ (_{D}\ \text{the}\ )\ (_{N}\ \text{tie}\ )\ )\ )\ )$

(8) $(_{S}\ (_{NP}\ (_{N}\ \text{Hilda}\ )\ )\ (_{VP}\ (_{V}\ \text{killed}\ )\ (_{NP}\ (_{D}\ \text{the}\ )\ (_{N}\ \text{roach}\ )\ )\ )\ )$

Transformational Immediate Constituent analysis (namely, Chomskian grammar) attempted to account first for sentences in which the lexical items were identical, in which meanings were identical, but in which constituent orders were different. To facilitate this analysis, the system postulated a common order of constituents from which a variety of orders was possible. In effect, this common order was called the deep structure of sentences. Perhaps the two types of sentences to receive most attention were the sentence containing a passive construction and the sentence containing an "extraposed" constituent. These two types are illustrated by (10) and (12) respectively.

(9) Karl opened the present

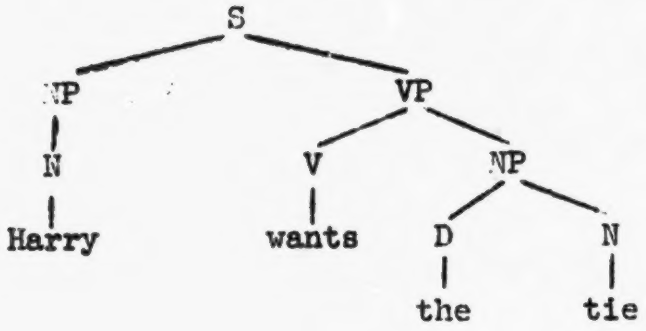
(10) The present was opened by Karl

(11) That Mary didn't come surprised no one

(12) It surprised no one that Mary didn't come

Evidence of Transformational grammar's reliance on IC analysis is provided by the nature of its syntactic diagramming, as illustrated in Figure 1. The constituent labels are

Figure 1



the same as those in (7), as are the dependency relationships. In addition, the diagram for (6) is identical to that of Figure 1 (with the exception of selectional features and inherent features).

Since the basic assumption implicit in this system, like that of its forerunner, is that the NP VP sequence is obligatory, every sentence has as its deep structure the form NP VP. If a sentence does not superficially reflect this NP as in the case of the imperative sentence and the agentless passive sentence, that NP is said to have been deleted in the process of sentence formation. Meaning is appealed to whenever sentences are formally relatable in order to justify the claims of deep structure identity. A commitment to the "neutral technical notion of 'syntactic description'"[21] prevented any direct investigation of meaning.

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[21] Noam Chomsky, "Topics in the Theory of Generative Grammar," in Current Trends in Linguistics. Vol. III: Theoretical Foundations. ed. by Thomas A. Sebeok (The Hague:Mouton, 1966), p. 5.

One new development of the Transformationalists, aside from the theoretical positing of transformations to account for syntactic variation, was that their system was generative: given a small set of rules, a syntactic structure could be generated into which morphemes were introduced to form acceptable sentences.[22] Yet these generative rules were basically a generalized form of Immediate Constituent analysis, as the constituent categories of the following illustrative generative rules demonstrate:

S ⟶ NP VP

NP ⟶ (D) N

VP ⟶ V (NP)

Fillmore attempted to overcome the semantic limitations of Transformational Immediate Constituent grammar with its obligatory NP VP deep structure by developing a case grammar, first in "A Proposal Concerning English Prepositions,"[23] then in "Towards a Modern Theory of Case,"[24] and finally in "The Case for Case."[25] Noting that the definition of deep subject as the NP immediately dominated by the S prevents an account of the essentially identical relationships between some verbs and some nouns, whether they are "subject" or "object," Fillmore claimed that the real deep structures of sentences are not of the ordered and highly structured form hypothesized by the Transformatinnalists, but rather are unordered sets of case relationships accompanied by a verb. Thus, "subject" and "object" are features only of surface structure. For example, by accounting for the synonymity of pairs of sentences like

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[22] This is somewhat of an oversimplification since the appropriate choice of morphemes was determined by other rules and the final phonemic form was determined by still another set of rules.

[23] Charles J. Fillmore. "A Proposal Concerning English Prepositions," Monograph Series on Languages and Linguistics No. 19 ed. by F. P. Dinneen (Georgetown University, 1966).

(13) Harry bought the bird from Schwartz
(14) Schwartz sold the bird to Harry

(15) Mary rented a car to Hubert
(16) Hubert rented a car from Mary

(17) Larry blamed the accident on Bud
(18) Larry blamed Bud for the accident

(19) Guy steals money from banks
(20) Guy robs banks of money

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[24] Charles J. Fillmore, "Towards a Modern Theory of Case," Project on Linguistic Analysis, Report No. 13 (The Ohio State University, 1966).

[25] Charles J. Fillmore, "The Case for Case."

by deep structure identity within case grammar, he demonstrated the failure of Transformational Immediate Constituent grammars, which have to postulate different underlying structures for each of these sentences. The implicit claim that two or more surface sentences which contain unidentical lexical items and unidentical "subjects" and "objects" can be derived from the same deep structure opened the way for a new kind of language analysis.

A brief examination of Fillmore's phrase structure component and its use of case relationships will demonstrate the strengths and the weaknesses of his case grammar. The phrase structure rules are as follows:[26]

S ⟶ M(odality) + P(roposition)

P ⟶ V(erb) + C_1 + ... C_n

C ⟶ N(oun) P(hrase) + K(asus)

NP ⟶ (D(eterminer)) + N(oun)

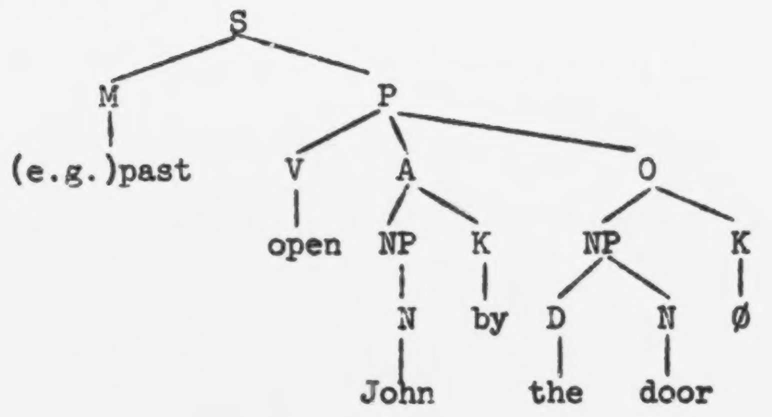
These rules will generate structures such as the one in Figure 2, which is the deep structure of (21).

(21) John opened the door

---

[26] These rules are only illustrative. The expansion of M(odality) is not stated since the relevant points of this discussion are related to the category P(roposition) and its expansion. "C_1 + ...C_n" are the various case relationships which may appear in the deep structures.

Figure 2



This figure reveals that the verb open can appear with an Agentive and an Objective NP. The Agentive relationship is signaled by the preposition "by" and the Objective relationship is unmarked, "Ø". If, as in (21), the Agentive is topicalized, its prepositional case marker is deleted. On the other hand, if the Objective is topicalized, the Agentive marker is retained:

(22) The door was opened by John

Since Fillmore claims that prepositions are case signals (with or without semantic significance or content), he can account for their appearance or non-appearance in terms of superficial, sometimes topical, constraints. Thus, the differences in the prepositions of (13)-(20) are matters of the superficial constraints imposed by considerations of topicalization. An additional feature of case grammar is its method for describing the syntactic-semantic character of verbs. The case co-occurrence possibilities form the basis for this description.

For example, open appears both in sentences which contain an Agentive NP and those which do not. Further, it always appears in sentences containing an Objective NP. This information is a part of the lexical description of open and may be presented in the following notation:[27]

open : + _____ (A) O

---

[27] This description of open is only illustrative since other case relationships may also appear with it. The parentheses indicate optionality; the lack of parentheses indicates obligatoriness.

Since individual case relationships are defined semantically, both lexical characterizations which contain them and deep structures reveal important aspects of meaning. For example, Fillmore defines Agentive and Objective in the following way:

> Agentive (A), the case of the typically animate perceived instigator of the action identified by the verb.
>
> Objective (O), the semantically most neutral case, the case of anything representable by a noun whose role in the action or state identified by the verb is identified by the verb itself; conceivably the concept should be limited to things which are affected by the action or state identified by the verb ....[28]

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[28] Fillmore, "The Case for Case," pp. 24-25.

Other cases are also defined semantically. However, Fillmore has said that case relationships are "semantically relevant *syntactic relationships*."[29] (Italics mine.) It is at least questionable whether syntactic relationships can be defined semantically and in no other way. Moreover, the phrase structure component which contains grammatical categories such as NP and V, which are neither defined nor definable semantically, also contains case designation such as A(gentive) and O(bjective), which are neither defined nor definable syntactically. Whether this mixture of semantic and syntactic categories is acceptable or not is really not at question. More specifically, whether semantic categories such as case relationships can generate (be rewritten as) syntactic categories is again not at question.[30] The important point is that Fillmore's case grammar is not a grammar of semantics insofar as its base is heavily syntactic.

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[29] Fillmore, "The Case for Case," p. 5.

[30] It might sound as if these potential criticisms were similar to those against "mixing levels" made by descriptive linguists. However, this is not at all the situation: if, in fact, there is a determinable inter-relationship between semantic and syntactic phenomena, it cannot be presented covertly; it must be defined and its account carefully justified. Fillmore's system does appear to suggest such an inter-relationship though it is never defined in such a way as to justify his semantic category-syntactic category connection.

A second objection to case grammar has been claimed to be one of its virtues: the lack of deep structure constituent order. True, this criticism loses its relevance if case grammar is basically syntactic, for a lack of syntactic constituent order at the deepest level of analysis has the advantage of relegating language specific constituent ordering to the transformational component. Yet any grammar which describes semantic deep structures ought to reflect cognitive linguistic order. For example, agents have semantic precedence over the objects involved in their actions. Further, since, as Weinreich[31] and Bendix[32] have pointed out, lexical items have their own semantic structures, a grammar which deals directly with meaning ought to reflect the intra-sentential dependency relations between lexical items and between semantic primitives within lexical items.[33] The transformational problem is only a mechanical one for if syntactic transformations can operate on syntactic deep structures to order and delete constituents, semantic transformations can operate on semantic deep structures to organize and collapse semantic units into language specific lexical items.

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[31] Uriel Weinreich. "Explorations in Semantic Theory," in Current Trends in Linguistics. Vol. III: Theoretical Foundations. ed. by Thomas A. Sebeok. (The Hague: Mouton, 1966), p. 419.

[32] Edward H. Bendix, Componential Analysis of General Vocabulary: The Semantic Structure of a Set of Verbs in English, Hindi, and Japanese. Part 2, of IFAL, 32. (Bloomington: Indiana University and The Hague: Mouton, 1966).

What, then, is the alternative to the Fillmore case grammar? Clearly, the concept of case is a revealing one if it is received in a different perspective. Since individual case relationships are defined semantically, it might be more revealing, if not more appropriate, to view them as syntactically relevant semantic relationships which exist not between nouns and verbs, which are syntactic categories, but between objects or things or places and actions or states, which are semantic categories. This alternative would involve, then, a finite set of semantic case relationships realized within sentences in various syntactic forms. The context of these relationships would be now not a syntactic phrase structure component which generates syntactic deep structures but a

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[33] It should be admitted that Fillmore does not address himself to the problem of the semantic structure of lexical items. Therefore, it is not appropriate to criticize his case grammar for this omission. It might well be that his possible expansion of O(bjective) into S could be a means whereby his system could account for complex lexical items. This possibility will be explored somewhat in Chapter III.

semantic phrase structure component, containing only semantic terms and categories, which generates logical semantic structures reflecting the cognitive structure of linguistic perception, the native speaker's intuition of semantic form and content. A well formed deep structure would, then, constitute a cognitive linguistic event as opposed to a sentence which is a physical linguistic event.[34]

Since the deep structure would inherently provide only semantic information, both intra-sentential and intra-lexical, and since the ultimate form of sentences is dependent on syntactic rules, a grammar of semantics would have to include a set of rules which would label semantic deep structures with syntactic terms to permit the operation of syntactic transformations.

While syntactic generative grammars have never provided a method for sentence analysis,[35] the very fact that case relationships are defined semantically means that they can be used in sentence analysis. It would be additionally desirable if a grammar of semantics could provide some method whereby one could proceed from sentence to deep structure instead of exclusively from deep structure to sentence.

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[34] This distinction is crucial since the difference between some arbitrary sentence such as "Eat!" and the underlying mental reality which contains the agent and object among other things must be recognized and accounted for if a grammar of semantics, of linguistic thought, is to be descriptively adequate.

[35] Rosenbaum did provide a structural test for NP: "What X is NP."

This discussion began from the point of view of language materials for children and evolved into a discussion of the relative merits of grammars and the possibility of a better grammar. Unfortunately, the history of grammatical theories shows that linguists are often concerned only with a highly restricted and sometimes artificial segment of the language: that set of banal sentences identified by the particular idiosyncracies of a grammar. If a grammar cannot be conceived in a manner which permits it to deal with real sentences, sentences found in student composition and poetry, it is probably worth very little, if any, study by children. If a new grammar of meaning is to be evolved it must be subjected to the rigorous test of a wide range of language phenomena, from poetry to student composition. If it fails to reveal anything about these forms of language, it is probably no better than an academic exercise.

Furthermore, the way in which a description of language intended ultimately for children is presented will be of perhaps equal importance to its "content." It is not only because, as Chomsky says, we know so little about language that any account of it should not be presented as a closed system in a mechanical way; rather, it is because learning is most effective and most rewarding when it occurs through principled investigation. Moreover, the linguistic data and conclusions about that data reside as unattended intuitions within the language investigator and his co-investigators, whether students or linguists. The native speaker, by definition, possesses a greater knowledge of his language intuitively than any linguist can ever describe explicitly. Therefore, the goal of language study must be to make those intuitions explicit by means of principled inquiry based on careful introspection. The approach of this paper, then, will be inquiry-oriented and will bear some resemblance to ordinary language philosophy, with one important difference. Its development will be systematic: it will develop and test linguistic concepts which are formally consistent, beginning only with the assumption that "case" provides a potentially revealing concept with which to initiate semantic analysis. Just as science is the formulating, testing, and rejecting of theories, so this investigation of language will be the formulating, testing, and rejecting of hypotheses about the nature of meaning in English. Tentativeness rather than certainty will be its characteristic attitude. Chapter II develops an extensive though not exhaustive case system through an examination of various types of sentences and illustrates its application to prose sentences. Chapter III develops a component of a grammar designed to incorporate case relationships into a description of semantic deep structures and a series of procedures for analyzing surface sentences into deep semantic structures; it illustrates this component and the application of these procedures to a sample of the prose sentences used as illustrations and data in Chapter II. Chapter IV illustrates the application of the methodological results of Chapters II and III to the critical reading of poetry. Chapter V states certain possible future areas of study which are necessary for a fuller validation of the ideas in this paper.

II CASE[1]

> A covert linguistic class...is then what I call a CRYPTOTYPE. It is a submerged, subtle, and elusive meaning, corresponding to no actual word, yet shown by linguistic analysis to be functionally important in the grammar.[2]

Let us take a simple verb like shatter and observe how it behaves in sentences:

(1) The window shattered

(2) John shattered the window with a rock

(3) A rock shattered the window

Each of these sentences has a different topical subject. In (1) shatter is intransitive since it is not followed by a noun phrase. In (2) and (3) shatter is transitive since it is followed by the noun phrase "the window." In addition, (2) contains an instrumental prepositional phrase "with a rock," which could not appear in (3).

Native speakers know that each of these sentences could refer to the same event. They also know that the sentence

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[1] Most of the principles and procedures in this chapter were derived from Charles J. Fillmore's "The Case for Case," particularly the concept of 'case relation' and the topic of 'inalienable possession.' For a complete list of Fillmore's other works which contributed to this chapter, see Bibliography.

[2] Benjamin Whorf, Language, Thought, and Reality.

(4) A rock shattered

could not refer to the same event as (1)-(3). In (1)-(3) the window changed into fragments; while in (4) the rock changed into fragments. Moreover, the words

(5) *John shattered

are not a sentence in any literal way if "John" refers to a human being because an understanding of the verb shatter includes the requirement that any object being shattered must be brittle. A rubber eraser, for example, cannot be shattered.

One conclusion we can draw is that there is not a single verb shatter, but rather three verbs, one of which is intransitive and co-occurs with brittle topics; another which is transitive and co-occurs with human topics, brittle objects, and an instrumental prepositional phrase; and the last which is transitive and co-occurs with non-human topics and brittle objects, but without an instrumental prepositional phrase. (Sentences like "*A rock shattered the window with a hammer" are unacceptable.)

However, such a claim is based only on the observation that shatter appears in sentences containing different words in different order, for example, (1)-(3). It does not account for the fact that the relationship between "shattered" and "the window" is understood in the same way in each sentence.

Nor does it account for our earlier observation that each of these sentences could refer to the same event. In effect, the meaning of shatter is the same in each of these sentences. It is also true that the relationship of "the rock" to "shattered" in sentence (2) is the same as that in sentence (3). Someone can throw a rock so that the window shatters; but a rock cannot behave in the way John behaves in order to produce the shattered window: some agent has to be present in the understanding of (3) since rocks do not have the capacity to initiate action.

The alternative conclusion is that shatter is a single verb for which a set of rules determines its possible co-occurrents. However, this conclusion does not account for the understanding of certain sentences in which parts that are essential to their interpretation do not appear. For example, there are sentences such as the passive and the imperative in which such essential elements do not appear, as in (7) and (9):

(6) The door was opened by someone
(7) The door was opened
(8) You go to bed now
(9) Go to bed now

The deletion of "by someone" in (7) would parallel the deletion of the instrumental phrase of (10) in (11).

(10) John shattered the window with something
(11) John shattered the window

However, we have indicated that many pairs or sets of related sentences differ in word order as well as in the presence or absence of constituents. Nevertheless, our account must be based on the way sentences are understood rather than on superficial constituent order. Let us, therefore, develop a description of shatter in terms of the information we have about its meaning and the requirements imposed by that meaning on its co-occurrents.

Shatter must appear with an object undergoing the change referred to by the verb. (We can use the term OBJECT[3] to refer to that which undergoes the change referred to by shatter.) There must also be some person who exerts force to produce the result, though this person does not have to appear in the sentence. We shall term this person AGENT. Some object must be used by the AGENT to bring about the action. This object will be called INSTRUMENT. The INSTRUMENT appears optionally[4] as either a noun phrase topic, (3) (A rock shattered the window), or a prepositional phrase, (2) (John shattered the window with a rock).

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[3] We will use upper case letters to designate case terms.

[4] An account of the rules which determine when and where INSTRUMENT can appear will not be presented at this time.

Since both AGENT and INSTRUMENT are optional co-occurrents and OBJECT is obligatory, we can state these requirements of shatter in the following fashion:

shatter : (AGENT) (INSTRUMENT) OBJECT

Because under certain conditions any of these elements may become the topical subject of some sentence, their relative order in this notation is superficially unimportant.[5] The parenthesis, ( ), indicate optionality.

Some sentences containing the verb shatter do not seem to include even an implicit AGENT. For example:

(12) The earthquake shattered the window

"Earthquake" might qualify as an INSTRUMENT though to do so it would have to be understood as being used by someone to carry out the action. Nature is a possibility although it might be more accurate to distinguish natural phenomena from animate beings like "John" by giving them a distinct designation. That such natural occurrences are different from animate beings is clear enough, yet their morphological and semantic composition provides additional evidence which it may be useful to recognize. Their lexical form is often that of an initial

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[5] Chapter III takes up the problem of semantic structure which makes the ordering of semantic entities important at a non-superficial level.

nominal morpheme, a noun which refers to some object, followed by a verbal morpheme, a verb which refers to some activity: waterspout, earthquake, rainstorm, waterfall, snowshower. On the other hand, like AGENT, these phenomena do seem to have their own capacity to exert power. We can capture both the similarity and the difference by introducing the term AGENCY. Henceforth, AGENT will refer to animate beings initiating action (exerting force or power) and AGENCY will refer to events in nature, natural phenomena, initiating action (exerting force or power). A logical question is whether both AGENT and AGENCY can appear in a single sentence.[6] There are no sentences in English like (13):

(13) *John and the earthquake shattered the window

Can AGENCY occur with INSTRUMENT in a sentence? There are no sentences in English like (14) either.

(14) *The earthquake shattered the window with a rock

Thus it appears as if shatter co-occurs with either an optional AGENT and INSTRUMENT or an optional AGENCY. Therefore, in sentence (1) (The window shattered), the initiator is ambiguously AGENT or AGENCY (though a context such as a story about a hurricane or a story about boys who were throwing rocks would determine the correct interpretation).

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[6] This question applies to simple sentences since we might readily produce the complex sentence: "John broke only a few of the windows in the old house before the earthquake shattered most of them."

The semantic facts we now have about *shatter* can be formulated in the following manner:

$$\underline{\text{shatter}} : \left\{ \begin{array}{c} (\text{AGENT}) \qquad (\text{INSTRUMENT}) \\ (\text{AGENCY}) \end{array} \right\} \text{OBJECT}$$

In this notation the wavy brackets indicate an *either-or* relationship between AGENT-INSTRUMENT on the top line and AGENCY on the bottom line: *either* there can be an optional AGENT, INSTRUMENT *or* an optional AGENCY. These alternatives are illustrated by the following sentences:

(15) The vase shattered OBJECT

(16) John shattered the vase AGENT OBJECT

(17) John shattered the vase with a stone AGENT OBJECT INSTRUMENT

(18) A stone shattered the vase INSTRUMENT OBJECT

(19) The storm shattered the vase AGENCY OBJECT

We can now define the terms we have used to characterize the verb *shatter*:

AGENT: AN ANIMATE BEING WHO EXERTS THE FORCE OR POWER REFERRED TO BY THE VERB

AGENCY: AN EVENT WHICH EXERTS THE FORCE OR POWER REFERRED TO BY THE VERB

INSTRUMENT: AN OBJECT USED BY SOME AGENT IN ITS EXERTION OF FORCE OR POWER REFERRED TO BY THE VERB

OBJECT: AN OBJECT WHICH UNDERGOES A CHANGE OF STATE REFERRED TO BY THE VERB[7]

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[7] The obvious problem arising out of the definitions that a verb may refer both to a change of state undergone by the OBJECT and to the force or power exerted by AGENT or AGENCY will be dealt with later. For purposes of introductory simplification, this discussion has been avoided.

Now let us test the usefulness of our terms by examining the verb strike, which differs in some interesting ways from the verb shatter. Strike occurs in sentences parallel to (2) and (3), which contain shatter:

(20) John struck the window with a rock

(21) A rock struck the window

In addition, there are sentences containing AGENCY as the subject of strike:

(22) The tornado struck the town

However, it does not appear in an intransitive parallel to (1): there is no such sentence as (23):

(1) The window shattered

(23) *The window struck

In short, strike co-occurs with the same types of subject as shatter, that is, AGENT or AGENCY, but it does not appear alone with its OBJECT.

What seems to be the semantic difference between strike and shatter besides that of possible co-occurrents? There are sentences like

(24) John struck the window with a rock but it didn't break

but not like

(25) *John shattered the window with a rock but it didn't break

The reason seems to be that strike is a surface contact verb, which does not entail any change of state, while shatter is a change-of-state verb. Thus, the oddity of (25) resides in the "but" clause's negation of the change of state referred to by the verb "shattered." A further difference is revealed by the following:

(26) John struck the window causing it to shatter

(27) *John shattered the window causing it to strike

The acceptability of (26) and the unacceptability of (27) suggest that shatter may refer both to some action performed by an AGENT and to a change of state undergone by an OBJECT, while strike refers solely to an AGENTive action. How, then, can we designate the different relationship which shatter has to its OBJECT from that which strike has to its OBJECT? Secondly, how can we describe the two-part character of shatter?

Perhaps the term OBJECT does not reveal distinctions between different types of verb objects. One type undergoes a change while another has its surface contacted. Yet "the window" of (26) is not different from "the window" of (27). What is different is the verb and the relationship it holds to "the window." Thus, it is not OBJECT types we want to describe but verb-OBJECT relationships. We can term the relationship between "struck" and "the window" in (26) CONTACTIVE. If we were able to factor the AGENTiveness out of *shatter*, we might describe the relationship between the verbal remainder and "the window" of (27) as REACTIVE since the change of state is a reaction to the AGENTive action by "John." But we must determine the nature of the AGENTive action in order to do so. Sentence (26) may provide a tentative answer since the presence of the pro-verb "cause" has allowed the appearance of the unit "it to shatter." This unit seems to capture just that change-of-state meaning which we need to factor out. Let us hypothesize the verbal element CAUSE as the intermediary between "John" and "the window." Now there are two features which distinguish *shatter* from *strike*. We can formulate the following description:

$$\underline{\text{shatter}}\text{:}\quad \left\{\begin{array}{cc} \text{(AGENT)} & \text{(INSTRUMENT)} \\ \multicolumn{2}{c}{\text{(AGENCY)}} \end{array}\right\} \text{CAUSE REACTIVE}$$

$$\underline{\text{strike}}\text{:}\quad \left\{\begin{array}{cc} \text{(AGENT)} & \text{(INSTRUMENT)} \\ \multicolumn{2}{c}{\text{(AGENCY)}} \end{array}\right\} \text{CONTACTIVE}$$

While this description appears to account for all we have discovered about these verbs, the fact that CONTACTIVE is preceded by entirely optional elements indicates that it can appear alone with the verb, but it cannot. We must alter our notation to show that either AGENT and/or INSTRUMENT must appear or that AGENCY must appear.[8] We shall use linking parentheses to show that either AGENT or INSTRUMENT or both may appear, and, by removing the parentheses around AGENCY, we can show that AGENCY must appear if neither AGENT nor INSTRUMENT is present. The revised notation, then is as follows:

$$\underline{\text{strike}}: \left\{ \begin{array}{c} (\text{AGENT} \;)(\; \text{INSTRUMENT}) \\ \text{AGENCY} \end{array} \right\} \text{CONTACTIVE}$$

This notation accounts for the sentences:

(28) John struck the wall AGENT CONTACTIVE

(29) John struck the wall with his fist AGENT CONTACTIVE INSTRUMENT

(30) John's fist struck the wall INSTRUMENT CONTACTIVE

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[8] It should be noted that our observations about the relational nature of our terms have not been reflected in any corresponding change in notation. When we say that, for example, AGENT must appear, we mean some noun which is AGENTively related to a verb. For reasons of simplicity, however, we shall continue to use the same terminology.

(31) The storm struck the village AGENCY CONTACTIVE

Our account of *shatter* will produce certain sentences which do not contain the word *cause* though, as we noted, they will contain its meaning. This fact suggests that *shatter* is--in those sentences containing AGENT, INSTRUMENT, or AGENCY--CAUSATIVE INCORPORATING, that is, causation is incorporated into the meaning of the verb. Since the element CAUSE is not present in those sentences where the REACTIVE appears alone, we should alter our notational description in the following way:

$$\underline{\text{shatter}} : \left(\left\{ \begin{matrix} \text{(AGENT)} \quad \text{(INSTRUMENT)} \\ \text{AGENCY} \end{matrix} \; \text{CAUSE} \right\} \right) \; \text{REACTIVE}$$

Now we have accounted for the fact that CAUSE is a necessary element whenever AGENT, INSTRUMENT, or AGENCY is chosen. The parentheses around the wavy brackets indicates that all elements within are optional. Now the illustrative sentences are:

(32) John caused the window to shatter AGENT CAUSE: unincorporated REACTIVE

(33) The rock caused the window to shatter INSTRUMENT CAUSE: unincorporated REACTIVE

(34) John caused the window to shatter by hitting it with a rock AGENT CAUSE: unincorporated REACTIVE CONTACTIVE INSTRUMENT

(35) A tornado caused the window to shatter AGENCY CAUSE: unincorporated REACTIVE

(36) John shattered the window AGENT CAUSE: incorporated REACTIVE

(37) The rock shattered the window INSTRUMENT CAUSE: incorporated REACTIVE

(38) John shattered the window with a rock AGENT CAUSE: incorporated REACTIVE INSTRUMENT

(39) The storm shattered the window AGENCY CAUSE: incorporated REACTIVE

(40) The window shattered REACTIVE

The discoveries we have made to this point can be stated briefly. By examining the behavior of strike and shatter, we found that the OBJECT, "window," was CONTACTIVE when it occurred with strike, but REACTIVE when it occurred with shatter. "Window" is not inherently one or the other. Conversely, the terms CONTACTIVE and REACTIVE do not refer to self-contained parts of the meaning of a verb though they are indicated by the nature of that meaning. These terms are essentially relational in their function: they describe the relationship between some activity and some object, or, in the case of AGENCY, between some event and some other event. It is true that particular verbs are limited to specific relationships in which they can occur. Thus, verbs provide crucial information for our analysis.

The analytical procedure we have used involves asking a number of questions about the verb and the sentences in which it may acceptably appear. Some of these questions can be stated in the following way:

a. Where is the action taking place? Within the OBJECT or between the OBJECT and something else? (shatter: action within the OBJECT; strike: action between the OBJECT and something else)

b. Is the action specified by the verb done by or to something referred to in the sentence?

c. Is there an understood or specified AGENT? INSTRUMENT? AGENCY?

d. What happens to the OBJECT as a result of the action?

e. Can the OBJECT appear alone with the verb? Can the AGENT or INSTRUMENT appear alone with the verb? What are the possible combinations?

We concluded that shatter and strike have different meanings and different behaviors though we never demonstrated more than a coincidental connection between their respective meanings and behaviors. Since "shattering" is an action which occurs within its OBJECT and is caused by the prior action of some AGENT or AGENCY, it should not be too surprising that such an internal action could appear alone in a sentence, standing as an independent resultant event, as in (40) (The window shattered). On the other hand, an action which occurs between objects or things or persons might be expected to require both nouns to appear in the sentence which refers to it. The verb strike corresponds exactly to these latter expectations. Further, though it may be premature, we could hypothesize that independent actions, for example, internal actions, could appear alone as acceptable sentences; while connective actions would require the appearance of each element of the connection, as surface contact verbs require the presence of contactor and contacted.

Finally, the following are the terms and their definitions used in the analysis and description of shatter and strike:

AGENT: AN ANIMATE BEING WHO INITIATES AN ACTION (EXERTS FORCE OR POWER) REFERRED TO BY THE VERB

AGENCY: AN EVENT WHICH INITIATES AN ACTION (EXERTS FORCE OR POWER) REFERRED TO BY THE VERB

INSTRUMENT: AN OBJECT USED BY SOME AGENT IN ITS EXERTION OF FORCE OR POWER REFERRED TO BY THE VERB

CONTACTIVE: AN OBJECT WHOSE SURFACE IS CONTACTED BY ANOTHER OBJECT IN THE ACTION REFERRED TO BY THE VERB

REACTIVE: AN OBJECT WHICH UNDERGOES A CHANGE OF STATE REFERRED TO BY THE VERB

Shatter and strike, as members of a particular class of physical action verbs, have distinctive grammatical and semantic characteristics. Other classes of verbs have their own characteristics. For example, surprise has features representative of emotional-response verbs. There are such sentences as:

(41) Holmes surprised the criminal

(42) The criminal was surprised

but not

(43) *Holmes surprised

If we ask the questions formulated earlier, we discover first that the action referred to by surprise is actually in the OBJECT, in this case "the criminal." There is, to be sure, action on the part of "Holmes." However, most important is whether the action done by "Holmes" or the action within "the criminal" is that which is explicitly referred to by the verb surprise. We noted that the AGENT of the verb shatter obviously had to do something to cause the change of state in the REACTIVE object, and that it was precisely this change in the REACTIVE which is referred to by the verb. Does surprise, to reason by analogy, refer to a change of state within the object as opposed to some action between the object and something else? The answer may become clear if we examine a sentence like (44):

(44) Holmes surprised the criminal by appearing from nowhere

What Holmes is actually doing is appearing from nowhere rather than acting on the criminal in a way parallel to the action referred to in the following:

(45) Holmes struck the criminal

Surprise is perhaps most accurately termed the state produced within the object by the AGENT: the object changes from a condition of non-surprise to surprise. The object's relationship to the verb, then, could be called REACTIVE.

We must, however, deal with two problems of this analysis. First, surprise does not behave in exactly the same way as shatter, for there is the sentence:

(46) The window shattered

but not:

(47) *The criminal surprised

though there is the sentence:

(48) The criminal became surprised.

Second, the change of state indicated by verbs like shatter is inorganic, while that indicated by surprise is organic. This observation corresponds to the knowledge that only concrete objects can shatter, and that only animals and people can come to be in a state of surprise. In addition, concrete inanimate objects can undergo only physical changes, while animate beings can "respond" to external stimulation in organic--non-physical, cognitive and emotional--ways. Animate beings actively enter into their environment, even produce their own environment in the form of thoughts and ideas, and respond to that environment in many ways.

A term is needed which captures both the similarities and differences between an inanimate "thing" and an animate being when they undergo a change of state. Such a term for the latter is RESPONSIVE.

RESPONSIVE: AN ANIMATE BEING WHICH UNDERGOES A CHANGE OF STATE REFERRED TO BY THE VERB

REACTIVE: AN INANIMATE OBJECT WHICH UNDERGOES A CHANGE OF STATE REFERRED TO BY THE VERB

We have suggested by implication that verbs of emotional response are all identical insofar as they co-occur with the same kind of OBJECT. This claim is supported by the fact that there are no sentences in which the verb of emotional response can co-occur with inanimate or abstract OBJECTs. For example, there are no sentences such as:

(49) *The gorilla surprised the stone

(50) *Henry surprised the tree

(51) *The vicious dog surprised the best idea I had in years

These examples support the rational knowledge of the meaning of surprise: there can be no emotional change of state within an object that cannot experience emotions.

As we might expect, emotional-response verbs co-occur with INSTRUMENTs. For example:

(52) The old man surprised the townspeople with his threats

(53) The bomb surprised the airline stewardess

They also appear in sentences containing AGENCY, as the following examples demonstrate:

(54) John's family was surprised by the hurricane

(55) Harry was surprised by the early snowfall

Since there are sentences like (42) (The criminal was surprised) and (48) (The criminal became surprised) and since "becoming surprised" is an internal event like "shattering," we must conclude that the role of AGENT (or AGENCY) is a causal one. The element CAUSE will, then, be included in the description of the verb surprise.

$$\underline{\text{surprise}}: \left\{\begin{array}{c} \text{(AGENT)(INSTRUMENT)} \\ \text{AGENCY} \end{array}\right\} \text{CAUSE RESPONSIVE}$$

Notice once again that the linked parentheses between AGENT and INSTRUMENT on the top line and the lack of parentheses around AGENCY on the bottom line indicate the following: AGENCY may appear; if it does not then either AGENT or INSTRUMENT must appear though both may appear. These constraints prevent the occurrence of such non-sentences as (47) (*The criminal surprised). Appropriately, (42) (The criminal was surprised) will be accounted for in this way: either the sentence is a passive construction, in which case it is derived from "X surprised the criminal" where "X" is an unspecified AGENT or INSTRUMENT or AGENCY which is deleted after the passive transformation; or the sentence is stative, in which case "surprised" is simply a stative adjective indicating the emotional state of "the criminal" at some time in the past. Again, in the latter case, the indefinite underlying "X"--AGENT, INSTRUMENT, or AGENCY--has been deleted in the process of sentence formation. Surprise is, like shatter, "causative incorporating" and, thus, "was surprised," under the passive interpretation of (42), incorporates a causal meaning, while the stative meaning does not.

The sentences which our description will account for are illustrated as follows:[9]

(56) The old man surprised me AGENT CAUSE: incorporated RESPONSIVE

(57) The bomb surprised me INSTRUMENT CAUSE: incorporated RESPONSIVE

(58) The storm surprised me AGENCY CAUSE: incorporated RESPONSIVE

(59) I am surprised RESPONSIVE

(60) The old man caused me to become surprised AGENT CAUSE: unincorporated RESPONSIVE

(61) The old man caused me to become surprised with his threats AGENT CAUSE: unincorporated RESPONSIVE INSTRUMENT

(62) The old man's threats caused me to become surprised INSTRUMENT CAUSE: unincorporated RESPONSIVE

(63) The whirlpool caused me to become surprised AGENCY CAUSE: unincorporated RESPONSIVE

We now take up a quite different type of verb which is exemplified in the following sentences:

(64) My father built our house

(65) Picasso painted excellent works

(66) Harry just made a new model airplane

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[9] It should be noted that many of the sentences presented with CAUSE: unincorporated are unutterable, a fact which indicates that incorporation of CAUSE is obligatory. However, such unutterable paraphrases are revealing and semantically well-formed, though untransformed, units. Therefore, we can accept them for explanatory purposes.

Where is the action of "building," "painting" and "making" taking place? Is it in the object or between the object and the AGENT? We can say AGENT, at least temporarily, since it appears that "father," "Picasso" and "Harry" are exerting force or power in their respective activities. What happens to the object as a result of the action? Each is brought into existence as a result of the action. There is no house before it is built, though the material and plans may exist; there are no works before they are painted, though the paints and idea in the mind of the painter may be present; and, finally, there is no model airplane before it is made, though the pieces, directions and picture of a finished model are perhaps all present.

These "creative" verbs are quite unlike shatter, which requires that the object be present before the action. One syntactic fact is that sentences containing "creative" verbs cannot be the answer to do to questions, which require an existing object:[10]

(67) What did your father do to the house?

is not answerable by (64). Thus, the house is not REACTIVE; it is not reacting to a prior action, but is the result of it.

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[10] Fillmore, "The Case for Case," p. 6.

Such non-sentences as:

(68) *My father built

(69) *Harry made

or:

(70) *The house built

(71) *A new model airplane made

show that, in this case, co-occurrence requirements are, then, like the requirements of meaning: there is no object without its creation, there is no creation without a creator--AGENT and resultant object are inseparable. The term RESULTATIVE captures the "creative" relationship of the object to the verb.

RESULTATIVE: AN OBJECT BROUGHT INTO EXISTENCE BY THE ACTION REFERRED TO BY THE VERB

Can a "creative" verb co-occur with an INSTRUMENT or AGENCY? The answer ought to depend on the fact that we know that people use tools or instruments to create objects and that, while we usually think that creative actions involve thought or will, it is not impossible for them to be quite accidental, a natural requirement for thoughtless, purposeless AGENCY. Let us examine, in this light, the following sentences:

(72) The storm made beautiful figures in the sky

(73) All of the rock sculptures in Grand Canyon were created by the wind and rain

(74) Matisse painted with odd shaped brushes

(75) This building was built with concrete forms

What, on the other hand, is wrong with sentences like these?

(76) *Camel hair brushes painted this portrait

(77) *Green ink printed this cartoon

(78) *Balsa wood made this model helicopter

Apparently the creative act is so dependent on the force or power of an AGENT or AGENCY that an INSTRUMENT cannot appear in such a sentence without any AGENT or AGENCY signal, though an unspecified AGENT or AGENCY (someone or something) may be deleted in the passive:

(79) This portrait was painted with camel hair brushes

(80) This cartoon was printed with green ink

(81) This model helicopter was made with Balsa wood

Now we can specify the environments of verbs like create, paint, and make in this way:

$$\underline{\text{create}}: \left\{\begin{array}{c}\text{AGENT (INSTRUMENT)}\\ \text{AGENCY}\end{array}\right\}\ \text{RESULTATIVE}$$

This notation means that either AGENT or AGENCY must be present and that INSTRUMENT may be present optionally if AGENT appears. "Be present" does not mean that the lexical item in that particular relation has to appear in the sentence directly, as we saw above in the case of the passive; rather it means that the idea must be present in the mind of the interpreter as he perceives the full meaning of the sentence.

The following sentences illustrate the possible case environments in which the verb create may appear:

(82) Karl creates beautiful paintings AGENT RESULTATIVE

(83) Karl creates beautiful paintings with new oils AGENT RESULTATIVE INSTRUMENT

(84) The wind creates sculpture in Grand Canyon AGENCY RESULTATIVE

When we use the verb paint as an example of a "creative" verb, we restrict our attention to only one of its possible meanings. Paint has an additional meaning of "put paint on X." Therefore, a sentence like "This man paints people" is ambiguous: either he creates portraits of people or he puts paint on people. Let us refer to the first meaning of paint as paint_1 and the second as paint_2. In the case of paint_2, the one who is painting is working with some object already in existence; and, as a result of this activity, the object undergoes a change. Is this change the same type as that referred to by verbs like shatter?

Notice the paraphrase we used for the meaning of paint_2: "put paint on X." We have no similar paraphrase for shatter, "put a shatter on X." This suggests that paint_2, unlike shatter, which is fundamentally a verb, is derived from the fundamental noun paint. One consequence of this claim is that the object of paint_2 has to be the same as the "X" of the paraphrase meaning, "put paint on X." In addition, it appears that "X" indicates the location or place where the paint is put. The most natural term for this type of object relation, then, would be LOCATIVE.

LOCATIVE: AN OBJECT WHICH REFERS TO THE LOCATION OF SOME OTHER OBJECT

There is still the problem of the "OTHER OBJECT" referred to in the definition above, in this case "paint." Within the framework of the relational terms we have developed, "paint" meets only the requirements of the REACTIVE; yet the paint does not undergo a change of state. What does happen to it? Someone takes the paint from some container and applies it, perhaps by means of a brush or sprayer, to the people, LOCATIVE. From this description, it would be more accurate to describe "paint" as a transferred object. We shall return to this observation later.

This discussion of $\underline{\text{paint}_2}$ serves to illustrate several facts about any analysis of language. First, when we choose some aspect of language to investigate, we must be prepared to accept the knowledge that only rarely, if at all, can we find isolated linguistic phenomena. Second, we must be prepared to deal with such interrelated phenomena, in at least a tentative way, as they occur. This is not to say that we have to account for everything. We have, for example, ignored by choice many topics of investigation, some of which we will pursue later. However, had it seemed appropriate to take up any of these during the course of our proceedings, we would have been ready, if not completely able, to do so. One further example will illustrate this point. $\underline{\text{Paint}_1}$, "to create an aesthetic object," might more accurately be said to mean: "to create an aesthetic object with paint." Like $\underline{\text{paint}_2}$, $\underline{\text{paint}_1}$ is derived, though in a different way. $\underline{\text{Paint}_1}$ is derived from the fundamental noun paint as INSTRUMENT in combination with the action of creating. Obviously, to "paint_1" people is not to create them using paint, but is to create a representation of people, where people are directly or indirectly models--clearly a much more complicated idea than simple object production. From this series of observations we can see that it would require a distractingly lengthy digression to fully account for the meaning of $\underline{\text{paint}_1}$.

The reverse process of creating is destroying and the following sentences illustrate this kind of action:

(85) The Chicago fire burned up thousands of homes

(86) The old Hanson Building was torn down by the Smith Wrecking Company

(87) The bomb dropped on Hiroshima destroyed thousands of buildings

(88) The old man exterminated the roaches in his basement

(89) The high seas created by the hurricane demolished the pier

In each event referred to by these sentences the objects were removed from existence by the action.

We could object to this observation on the following basis. Let us suppose that after the hurricane referred to in (89) we were to go to the beach, to the pier's location. There in the sand are some pieces of board, a piling or two standing in the water with a part of the pier attached to them. We say, pointing to the pilings and board, "This pier will have to be rebuilt." From our use of "this pier" we can claim that the pier is not non-existent, but is rather simply in a useless condition, in pieces.

However, the use of the verb rebuilt suggests that we have said something contradictory. We did not say "repaired," for that would indicate that the pier still existed, but was in a less than acceptable condition; we said "rebuilt": "built again." We cannot build something again if it still exists. What happened in our sentence is ambiguous: either we inappropriately used the word this instead of the, in which case the total sentence means "The pier which was existing before the hurricane will have to be rebuilt"; or we misused the word rebuilt when in fact we meant to appropriately use the word repaired.

Sentence (88) (The old man exterminated the roaches in his basement) might also be used in an argument against the claim that destroyed objects no longer exist. We could say that the event referred to by this sentence involves something like the following: the old man put out poison, which killed the roaches. Now we know that a dead roach still exists. Therefore, the roaches exterminated by the old man still exist and the claim is falsified.

Nevertheless, a dead roach is not the same as it was when it was alive. Moreover, it is precisely the meaning of _exterminate_ that the object which was living prior to the action is rendered non-existent as a living object. A house cannot be exterminated for the very reason that it cannot be living. If _exterminate_ means to obliterate life, it is only logical (and, therefore, semantically appropriate) that its object be a living creature prior to the action. Notice that the following is unacceptable:

(90) *The old man exterminated the dead roaches in his basement

If we were to investigate a more general verb like _obliterate_, we would find it predicable of houses as well as roaches. Under the circumstances the interpretation would be that the concrete object "house" and the concrete object "roach" were rendered non existent. Thus, _exterminate_ is like _kill_ in that both mean "to cause life to become non-existent"; while _obliterate_ is like _destroy_ in that both mean "to cause a concrete object to become non-existent."

If we make this distinction between verbs which refer to a destruction of life and those which refer to a destruction of physical objects, how are we to account for sentences such as:

(91) The fire burned up hundreds of people.

in the face of knowledge that people are living beings (as opposed to bodies which may or may not be) and that burn up means "to destroy a physical object"? The answer resides in the fact that bodies must exist to support life, while it is not necessary that life exist to support bodies. The meaning of burn up, then, is not the same as that of kill; when the body is destroyed it necessarily follows that life perishes. In the sentence:

(92) John burned up in the fire

the meaning is something like

(93) John's body was destroyed in the fire

which entails the additional meaning

(94) John died in the fire

Given the distinction between "life-destroying" and "object-destroying" verbs, we have two alternative ways of accounting for the difference. First, we can posit two separate terms to describe the type of object relations which can occur with these respective kinds of verbs. This procedure in turn could lead us to consider the similarities between the verb-object relation of verbs like *kill* and that of verbs like *surprise*. For example, we might examine the definition of RESPONSIVE to determine whether it would be applicable to the verb-object relation of *kill* and other verbs of "life-destruction." In fact, dying or being killed is restricted to animate beings and does describe a change of state, both parts of the definition of RESPONSIVE.

RESPONSIVE: AN ANIMATE BEING THAT UNDERGOES A CHANGE OF
STATE REFERRED TO BY THE VERB

We should notice the fact that *kill* has an alternate form---*die*---which appears when the object of *kill* stands alone without any AGENT, INSTRUMENT, or AGENCY, for example, (94). This fact suggests that the unit "some animate being died" is a semantically independent event just as we observed that the unit "some animate being became surprised" is semantically independent.

If we choose to term the object of *kill* and other verbs of "life-destruction" RESPONSIVE, then we will need an additional term for the objects of verbs which refer to physical-object-destruction. The crucial difference between these two types is in the dimension of animacy, the former being animate and the latter inanimate. Further, this dimension is precisely the one which distinguishes RESPONSIVE from REACTIVE.

REACTIVE: AN INANIMATE OBJECT WHICH UNDERGOES A CHANGE OF STATE REFERRED TO BY THE VERB

One difficulty in using REACTIVE to designate the verb-object relation peculiar to verbs of "physical-object-destruction" and RESPONSIVE to designate that peculiar to verbs of "life-destruction" arises from the consequent grouping of verbs like _break_ and _shatter_ with _destroy_ and _obliterate_; and _surprise_ and _startle_ with _kill_ and _exterminate_. Such a grouping fails to mark the fact that the objects of _break_ and _shatter_ exist in some state after the action, whereas the objects of _destroy_ and _obliterate_ do not. Such an omission does not make the analysis incorrect for we could claim that this semantic difference between, for example, _break_ and _destroy_ is not a difference between the verb-object relations of these respective verbs, but rather is a difference between their meanings as units independent of their objects. We might say, as a result, that _break_ means partial destruction while _destroy_ means, simply, destruction.

Alternatively to designating two separate terms for the verbs under consideration, we could posit one term, such as DESTROYED OBJECT, which would account for the object of a verb like _kill_ as well as one of a verb like _destroy_. This analysis would lead us to claim that any difference between _kill_ and _destroy_ must reside completely within the independent meanings of these respective verbs. The DESTROYED OBJECT relation would be, then, in direct opposition to the

RESULTATIVE, but would not make the life-physical object distinction.

Either account relegates a certain important distinction to the respective meanings of the verbs. At this point we have no clear basis for making a choice. If we are satisfied with simply categorizing destroy and kill, die as change-of-state verbs, we can tentatively accept the first analysis; if not, then perhaps the second one. Both, however, are available and one may become more acceptable as we acquire more knowledge about other verbs and their relationships.

Like verbs which refer to creative actions, those referring to the reverse process can co-occur with either AGENT and, optionally, INSTRUMENT or AGENCY. But let us examine the following sentences:

(95) The hurricane destroyed many homes and killed thousands of people

(96) Poison kills many children in the U.S. each year

(97) Exterminators kill insects mostly with DDT

(98) The veterinarian had to kill the rabid dog

(99) Cigarettes kill more men than women yearly

In (96) and (97), unlike similar sentences containing "creative" verbs, the INSTRUMENT can appear without any concomitant AGENT signal. We said that the creative act is perhaps so much connected to the force or power involved that our language does not permit an inanimate object which is the INSTRUMENT to appear without an AGENT in a sentence containing "creative" verbs. We cannot make such a statement about verbs of "destruction" just as we could not about change-of-state verbs like shatter and surprise. Apparently, if we can use this observation as a guide, we view destruction, through our language, as occurring within the object itself. This claim is at least partly supported by such sentences as

(100) The rabid dog died

which reflects the internal action referred to by the verb die. On the other hand, there are no sentences like

(101) *The old house destroyed (demolished, obliterated)

However, there is the sentence:

(102) The old house burned up

The case of destroy, obliterate, and demolish may be like that of surprise, which has only the stative adjective form appearing alone with its OBJECT. English does have sentences like

(103) Henry's barn is destroyed (obliterated, demolished)

This may be additional evidence for the RESPONSIVE, REACTIVE analysis of the OBJECTs of verbs like kill and destroy respectively. Therefore, we will state, but only tentatively, the environment for kill, exterminate, and other verbs which refer to the action of destroying life as follows:

$$\textit{kill}: \left\{ \begin{array}{c} (\text{AGENT} \;\between\; \text{INSTRUMENT}) \\ \text{AGENCY} \end{array} \right\} \text{RESPONSIVE}$$

which indicates with the linked parentheses between AGENT and INSTRUMENT that either one or the other must appear in the sentence and that both may appear; otherwise, AGENCY is chosen. We could state, then, the conditions for *die* in this way:

die: RESPONSIVE

This notation accounts for the fact that neither AGENT, INSTRUMENT, nor AGENCY may appear with *die*.

However, we have noted that *die* seems closely related to *kill* in that *die* describes the action of the RESPONSIVE object, while *kill* describes the action of the RESPONSIVE object and the action of the AGENT, INSTRUMENT or AGENCY. Considering the element CAUSE and the account developed of *shatter* and *surprise*, we may conclude that *kill* is simply the CAUSATIVE INCORPORATING form of *die*; put the other way, *die* is the non-causal form of *kill*. If this claim is true, the meaning of *kill* ought to be, in paraphrase form: "cause X to die," where "X" is animate. If these observations are accurate, we have missed an important generalization by stating two separate accounts of *kill* and *die*. We can capture this generalization in the following way:

$$\underline{\text{kill}}:\ \left(\left\{\begin{array}{c}(\text{AGENT}\ \phi\ \text{INSTRUMENT})\\ \text{AGENCY}\end{array}\ \text{CAUSE}\right\}\right)\ \text{RESPONSIVE}$$

The information inside the wavy brackets now includes CAUSE; the parentheses around the wavy brackets indicates the optionality of the material within, which if not present results in the appearance of die in a sentence. Exterminate and all other such verbs taking a RESPONSIVE object would have the same specification since die is also their alternate, non-causal form.

The sentences which illustrate the various possibilities are the following:

(104) John killed the fox AGENT CAUSE: incorporated RESPONSIVE

(105) John killed the fox with his pistol AGENT CAUSE: incorporated RESPONSIVE INSTRUMENT

(106) The poison killed the fox INSTRUMENT CAUSE: incorporated RESPONSIVE

(107) The storm killed the fox AGENCY CAUSE: incorporated RESPONSIVE

(108) John caused the fox to die AGENT CAUSE: unincorporated RESPONSIVE

(109) John caused the fox to die by shooting it with his pistol AGENT CAUSE: unincorporated RESPONSIVE INSTRUMENT[11]

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[11] We are not analyzing the complex sentential INSTRUMENT "by shooting it with his pistol" since it is not relevant to the present illustration.

(110) The poison caused the fox to die INSTRUMENT CAUSE: unincorporated RESPONSIVE

(111) The thunder caused the fox to die (of fright) AGENCY CAUSE: unincorporated RESPONSIVE

(112) The fox died RESPONSIVE

The environment of the verbs destroy, demolish, obliterate and others referring to actions which remove physical objects from existence will be stated as follows:

$$\underline{\text{destroy}}:\left.\left\{\begin{array}{l}(\text{AGENT}\ \phi\ \text{INSTRUMENT})\\ \qquad\text{AGENCY}\end{array}\right.\ \text{CAUSE}\right\}\ \text{REACTIVE}$$

The illustrative sentences are:

(113) John destroyed the table AGENT CAUSE: incorporated REACTIVE

(114) John destroyed the table with a hammer AGENT CAUSE: incorporated REACTIVE INSTRUMENT

(115) My hammer destroyed this table INSTRUMENT CAUSE: incorporated REACTIVE

(116) The tornado destroyed the house AGENCY CAUSE: incorporated REACTIVE

(117) John caused the table to be destroyed AGENT CAUSE: unincorporated REACTIVE

(118) John caused the table to be destroyed by beating on it with a hammer AGENT CAUSE: unincorporated REACTIVE INSTRUMENT

(119) My hammer caused the table to be destroyed INSTRUMENT CAUSE: unincorporated REACTIVE

(120) The table is destroyed REACTIVE

However, verbs like burn up are described in this way:

$$\underline{\text{burn up}}: \ \left(\left\{\begin{matrix} \text{(AGENT) (INSTRUMENT)} & \\ & \text{CAUSE} \\ \text{AGENCY} & \end{matrix}\right\}\right) \ \text{REACTIVE}$$

This notation is the same as that for shatter and indicates that the REACTIVE may appear alone with the verb as an independent entity (not simply as a state as in the case of destroy) which refers to an event. The illustrative sentences are:

(121) Martha burned up the house AGENT CAUSE: incorporated REACTIVE

(122) Martha burned up the house with gasoline AGENT CAUSE: incorporated REACTIVE INSTRUMENT

(123) The gasoline burned up the house INSTRUMENT CAUSE: incorporated REACTIVE

(124) The forest fire burned up the house AGENCY CAUSE: incorporated REACTIVE

(125) Martha caused the house to burn up AGENT CAUSE: unincorporated REACTIVE

(126) Martha caused the house to burn up by using gasoline AGENT CAUSE: unincorporated REACTIVE INSTRUMENT

(127) Gasoline caused the house to burn up INSTRUMENT CAUSE: unincorporated REACTIVE

(128) The forest fire caused the house to burn up AGENCY CAUSE: unincorporated REACTIVE

(129) The house burned up REACTIVE

Let us, for convenience, restate the case relationships we have now.

AGENT: AN ANIMATE BEING WHO INITIATES AN ACTION (EXERTS FORCE OR POWER) REFERRED TO BY THE VERB

INSTRUMENT: AN OBJECT USED BY SOME AGENT IN ITS EXERTION OF FORCE OR POWER REFERRED TO BY THE VERB

AGENCY: AN EVENT WHICH INITIATES AN ACTION (EXERTS FORCE OR POWER) REFERRED TO BY THE VERB

CONTACTIVE: AN OBJECT WHOSE SURFACE IS CONTACTED BY ANOTHER OBJECT IN THE ACTION REFERRED TO BY THE VERB

REACTIVE: AN INANIMATE OBJECT WHICH UNDERGOES A CHANGE OF STATE REFERRED TO BY THE VERB

RESPONSIVE: AN ANIMATE BEING THAT UNDERGOES A CHANGE OF STATE REFERRED TO BY THE VERB

LOCATIVE: AN OBJECT WHICH REFERS TO THE LOCATION OF SOME OTHER OBJECT

RESULTATIVE: AN OBJECT BROUGHT INTO EXISTENCE BY THE ACTION REFERRED TO BY THE VERB

Our answers to question a. (page 37), which states the following:

> Where is the action taking place? Within the OBJECT or between the OBJECT and something else?

have led us to the general observation that many, though not all, verbs which refer to action within some object can occur alone in sentences with only the OBJECT present or the OBJECT + "become" + the verb. Many of the verbs which co-occur with the REACTIVE and RESPONSIVE fit this generalization: shatter, burn up and break are in the former category, while die is in the latter. Those verbs which do not permit the OBJECT to appear alone do, nevertheless, form stative adjectives, for example, "is surprised" and "is demolished." The action referred to by verbs like strike is not within the object but is between two objects. These verbs do not permit either sentences of the object-verb form or sentences containing the verbs as stative adjectives or OBJECT + "become" + the verb. Thus there is no sentence:

(130) *The little boy is hit

or:

(131) *The little boy became hit

There are no sentences like "*The boy is killed" but rather there is the variant form "The boy is dead."

Our answers to questions b. and c. (page 37)

> Is the action specified by the verb done by or to something referred to in the sentence?
>
> Is there an understood or specified AGENT? INSTRUMENT? AGENCY?

have led us to notice that there are sentences in which the AGENT or INSTRUMENT or AGENCY does not appear even though native speakers intuit its presence as a necessary condition for understanding the sentence in which it might have appeared. Some of these sentences, most notably the passive, provide a signal, the presence of some form of be with the verb, that the AGENT or AGENCY has been deleted in the process of sentence formation (though even this, as we have seen, is not an unambiguous signal). Others, however, do not provide any overt signal and the knowledge that AGENT or AGENCY exists is, therefore, based on the knowledge of meaning and possible meaning relationships of different verbs and objects.

Our answers to question d. (page 37),

> What happens to the OBJECT as a result of the action?

have provided us with the insight into the difference between verbs which bring an object into existence and verbs which remove an object from existence.

We have observed in the difference between the REACTIVE and the RESPONSIVE a division between the inanimate world and the animate world. There are verbs which refer to actions that are only possible with regard to animate beings; there are also those actions that are possible with regard to a physical object. All of the verbs we have investigated so far have referred to actions requiring concrete, physical objects rather than abstract ones. All have involved some type of OBJECT. And all have co-occurred with relations which were non-complex--none have co-occurred with, for example, a combination of REACTIVE and CONTACTIVE relations. We shall continue to expand our relational OBJECT types along simple lines, using uni-relational verbs and sentences, before turning to poly-relational verbs.

We have dealt with surface-contact verb actions, which indicate no necessary effect on their objects, and with change-of-state verb actions, which indicate some internal reaction in their objects. In addition to these two classes there is another which is made up of verbs like _cut_, _slice_, _scratch_, _carve_, _gash_, _lacerate_, _scrape_, and the like. These verbs appear in sentences like

(132) My brother cut his foot at the swimming pool

(133) Harry is slicing the cheese for our sandwiches

(134) The branches scratched my back as I went under the fence

(135) John's father used his new electric knife to carve the turkey

(136) Martha's brother scraped his knee while playing football

(137) The farmer gashed his arm on the mower

(138) A rusty nail punctured my foot as I walked along the road

In the first place, the objects of the actinns referred to by these verbs are not like those of surface-contact verbs since the objects in the former actions are altered in these actions. On the other hand, the actions are not exclusively within the objects: the _process_ of alteration is that between the altering object, AGENT or AGENCY, and the altered object. Cutting does not occur as a result of the action of a knife, rather it is the very action of the knife which is described by the verb _cut_. A "cut hand" is the object after the cutting process has altered it. Because of these reasons and because there are no sentences in English such as

(139) *The hand cut

(140) *The arm gashed

(141) *My foot punctured

it is clear that the OBJECTs of these verbs are not REACTIVE. Therefore, we will postulate the new term: AFFECTIVE.

AFFECTIVE: THE OBJECT WHICH IS ALTERED BY THE ACTION REFERRED TO BY THE VERB

For all the sentences above the AFFECTIVE is immediately obvious: "foot," "back," "arm," and so. However, there are variations of these sentences which make such a determination more of a problem. Let us take, for example, a variant of (132):

(142) My brother cut himself on the foot at the swimming pool

Now it appears, superficially, that "himself" is the OBJECT, the AFFECTIVE, and that "foot" is a locational object, LOCATIVE, determined by the locational preposition "on." If these two sentences are, in fact, synonymous variations, we might ask whether "foot" or "himself," the reflexivized pronominal form of "my brother," is the "thing" which is "cut." However, the postulation of the question is enough to reveal its inappropriateness since, obviously, we are dealing with a part-whole relationship and, when the part is affected, so is the whole. When the reflexivized pronoun, "himself," appears, so does "the foot" and not "his foot," but when the possessive pronoun "his" appears, there is no "the." There are no sentences like

(143) *John cut the foot

a fact which suggests that the inalienable part of a whole, in this case the foot of my brother, requires the identification of the whole to which it belongs. This requirement is satisfied by the possessive "his," and also by the reflexive "himself," the latter providing the necessary reference for, and identification of, "the" in "the foot."[12]

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[12] It has been pointed out that some dialects permit the redundant identification of the possessor in such sentences as "John cut himself on his foot," though none to my knowledge permit the occurrence of an unidentified possessor as in (143).

Apparently, however, in spite of this intimate connection between an inalienable part and the whole and the subsequent knowledge that an alteration of the former is an alteration of the latter, English has a device which is illustrated in the two variant sentences above for "focusing" on either one or the other: when it is the whole which receives the focus, the part appears as LOCATIVE; when it is the part, the whole appears as possessive. This appearance is, nevertheless, superficial since the basic meaning relationship, whole-part, is unaltered in its different surface forms.

What this means for our analysis is that the entire unit, "his foot" or "himself on the foot," will be termed AFFECTIVE. Until and unless we develop further analytical means of dealing with part-whole relationships, we can state that there are, when it is appropriate to the content of particular sentences, two AFFECTIVEs: one is AFFECTIVE WHOLE and the other is AFFECTIVE PART. Thus the phrase "his foot" can be separated into "his" and "foot" as examples of the former and latter respectively, similarly "himself" and "on the foot" can be categorized as the possessive variant of AFFECTIVE WHOLE and the locational variant of AFFECTIVE PART respectively.

This temporary solution only halves the set of difficulties present in sentences containing verbs like cut. We have yet to deal with the other relations indicated by the semantics of these verbs. Let us examine the following sentences:

(144) The farmer cut himself on the mower[13]

(145) The farmer cut himself with the mower

(146) The mower cut the farmer

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[13] (144) is clearly ambiguous: it can mean "the farmer cut himself when he was on the mower," in which case the mower may or may not have been instrumental in the cutting, or it can mean "the farmer cut himself and the mower was instrumental in the act." However, it is only the second meaning which is similar to the meaning of (145) and (146), and the only one, therefore, which is relevant to the present discussion.

We could account simply for these sentences by stating that cut co-occurs with an optional AGENT and an INSTRUMENT, and that the INSTRUMENT becomes the topical subject when the AGENT does not appear. Such simplicity might be justified if (144) and (145) were synonymous. However, there seems to be a difference in meaning which might be stated something like this: (144) seems to indicate that the farmer was not directly in control of the mower, but (145) suggests that the mower was under his control. The locative INSTRUMENT (if indeed "the mower" of (144) is an INSTRUMENT) carries, therefore, an ambiguity of intention: the farmer may or may not have intended to cut himself. This observation is supported by the acceptability of both (147) and (148):

(147) The farmer accidentally cut himself on the mower

(148) The farmer deliberately cut himself on the mower

The reverse implication, that control implies intention, is not clearly demonstrable by (149) since it is only questionably unacceptable:

(149) ?The farmer accidentally cut himself with the mower

(150) The farmer deliberately cut himself with the mower

If (149) is actually unacceptable, control of the INSTRUMENT implies intent. Lack of control renders intent ambiguous. A sentence in which the INSTRUMENT is stationary and, therefore, not controllable by the AGENT is very odd if the INSTRUMENTal preposition is "with":

(151) *The boy cut himself with the house

Sentence (144) appears to be like (146) in that "the mower" in both is ambiguously either intentionally or unintentionally INSTRUMENT; however, (146) leaves the identity of the AGENT unspecified.

Since control of the INSTRUMENT by the AGENT is clearly determinable from the preposition and since intent may or may not be correlated with control, we can take the more clearly accurate position that there are two types of INSTRUMENT which are distinguishable by the fact of control or lack of it. We will, then, put aside the question of intent until such a time as we can state with greater certainty whether or not it correlates with control. Thus, we now have the following:

CONTROLLED INSTRUMENT: AN OBJECT WHICH IS UNDER THE CONTROL OF THE AGENT AND IS USED BY THE AGENT IN ITS EXERTION OF FORCE OR POWER REFERRED TO BY THE VERB

UNCONTROLLED INSTRUMENT: AN OBJECT WHICH IS NOT UNDER THE CONTROL OF THE AGENT BUT ENTERS INTO THE ACTION REFERRED TO BY THE VERB

CONTROLLED INSTRUMENT appears in a phrase signaled by the preposition with; UNCONTROLLED INSTRUMENT appears in a phrase signaled by the preposition on. It is interesting that the instrumental verb use can only appear as a signal for the

CONTROLLED INSTRUMENT:

(152) The boy used a piece of glass to cut himself

(153) *The boy used the house to cut himself

(153) must be unacceptable since houses are stationary and too large to be controllable.

The concepts CONTROLLED and UNCONTROLLED INSTRUMENTs have value beyond the class of verbs we have just been investigating. For example, those verbs which indicate a change of state within physical objects (REACTIVE verbs) co-occur with these two forms of INSTRUMENT. The following sentences illustrate this point:

(154) The demonstrator broke the bottle on the policeman's head

(155) The vase broke on the edge of the table

(156) Karl crushed the cup on the floor

(157) Mary shattered the glass with her fist

Verbs which co-occur with the REACTIVE also appear with UNCONTROLLED INSTRUMENTs in onto, over and against phrases:

(158) Jerry cracked the dish over Martha's head

(159) Hortense smashed the lamp onto the floor

(160) Karl splintered the china against the wall

If we try to describe the co-occurrence restrictions of AFFECTIVE verbs in terms of the possible appearance of AGENCY, we find a complicated situation. That some forms of AGENCY do occur with AFFECTIVE verbs is illustrated by the following:

(161) The cyclone gashed a hole in the ship's deck

(162) The wind lacerated the boy's face

(163) The house was sliced in two by the tornado

It may be that such sentences are metaphorical rather than semantically regular. Thus, AGENCY could perhaps be personified by its appearance in relational positions restricted to AGENT. While it is somewhat unsatisfying, we can do no more than make these general observations in the form of questions at this time.

The environment for the verb cut can now be stated in the following notation: [14]

$$\underline{\text{cut}}:\left\{\begin{array}{l}(\text{AGENT } \emptyset \text{ CONTROLLED INSTRUMENT })\\(\text{AGENT } \emptyset \text{ UNCONTROLLED INSTRUMENT })\\\qquad\qquad ?\text{AGENCY}\end{array}\right\}\ \text{AFFECTIVE}$$

The possible alternatives are illustrated below:

(164) John cut the cheese AGENT AFFECTIVE

(165) Mary cut her foot with a breadknife AGENT AFFECTIVE CONTROLLED INSTRUMENT

(166) Karl cut his hand on the fender AGENT AFFECTIVE UNCONTROLLED INSTRUMENT

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[14] Since we have analyzed our former INSTRUMENT into two distinct types, all of the environmental specifications of verbs we have previously investigated will have to be altered accordingly. However, this is a relatively simple task with obvious consequences and we will not, therefore, undertake it formally.

(167) The knife cut Charles' hand CONTROLLED or
UNCONTROLLED INSTRUMENT AFFECTIVE

(168) The lightning cut the tree's branch off
AGENCY AFFECTIVE

We have thus far examined a number of verbs which co-occur with "direct objects." There are verbs which form a subset of "direct object" verbs whose distinguishing characteristic is their appearance with a second object, an "indirect object," often signalled by to. To see the various relations indicated by "indirect object" verbs, let us examine the following:

(169) I gave the book to the man

(170) John sent the paper to the teacher

(171) Harry distributed the food to the men

(172) Mervin sold the car to Henry

(173) I lent five dollars to my brother

(174) The general transmitted the information to his men

(175) The secretary transferred all calls to her boss

While "I," "John," "Harry," for example, are probably AGENTively related to the respective verbs because they do initiate the action referred to by those verbs, two difficulties are apparent. First, the "direct objects"—"book," "paper," "food," for example—do not correspond to any of the relational cateogries we have investigated. They are all inanimate yet they do not undergo any change of state and are not, therefore, REACTIVE. Their verbs do not refer to any surface-contact action and are not, therefore, verbs which indicate a CONTACTIVE relation either. Second, the "indirect objects," the "to" phrases, do not correspond to any of the relational categories we have developed.

We may ask where the action referred to in these sentences is occurring. In (169), it is certainly not within "the book" or "the man." "Giving" involves a relationship between the giver, the given, and the receiver--the action is between all three. To demonstrate this observation, we might try to imagine a situation in which someone is giving but nothing is given, or one in which someone is giving something but no one is receiving. Or we might, conversely, try to imagine a situation in which something is received but no one is giving. The impossibilities of these situations demonstrate the intimate and necessary connection between the three parts of the relationship designated by the verb give. Even sentences such as the following:

(176) John gives to charity

(177) Mary received a new car on her birthday

(178) Henry gives five dollars a week

are recognized as necessarily meaning, respectively:

(179) John gives something to charity

(180) Mary received a new car on her birthday from someone

(181) Henry gives five dollars a week to someone

In addition, there are no sentences of the form:

(182) *I gave

(183) *The book gave

(184) *Mary received

Is the action referred to by the verb give done by or to some object referred to in the sentence? In the sentences we have seen, for example, (169)-(170), "I" and "John" are initiating the action. The question whether the action is done "to" "the book," for example, seems odd. The book is certainly involved in the action but not in the way a simple contact verb would indicate.

What happens to the object we termed "direct object" in the action? It is neither created nor destroyed nor physically altered. It is transferred: prior to the action it is possessed by the giver and after the action it is possessed by the receiver. Let us, then, term the relationship between the transferred object and the action TRANSMITTIVE and the relationship between the receiver and the action RECEPTIVE. Thus, for example, in (169) the relationship between "the book" and "gave" is TRANSMITTIVE and that between "the man" and "gave" is RECEPTIVE.

TRANSMITTIVE: THE OBJECT WHICH IS TRANSFERRED IN THE ACTION REFERRED TO BY THE VERB

RECEPTIVE: THE OBJECT TO WHICH THE TRANSMITTIVE IS TRANSFERRED IN THE ACTION REFERRED TO BY THE VERB

We will now examine a set of sentences which appear to be synonymous with the first set, (169)-(175):

(185) The man received the book from me

(186) The teacher received the paper from John

(187) The men received the food from Harry

(188) Henry bought the car from Mervin

(189) My brother borrowed five dollars from me

(190) The men received the information from their general

(191) The boss received all calls from his secretary

While the forms of the verbs in these sentences are different from those of (169)-(175), the respective meanings do seem to be the same. For example, for me to give a book to a man is for him to receive that book from me. Also for me to lend five dollars to my brother is for my brother to borrow five dollars from me. The major difference between these two sets aside from the form of the verb is that the RECEPTIVE is in the initial sentence position in the second set of sentences and in the final position in the first set; further, the AGENT is the topical subject of the first set and the final prepositional phrase of the second set. As topical subject, the RECEPTIVE is unprefaced by the preposition to and the AGENT is preceded by the preposition from, a new form for AGENT not previously encountered. Perhaps AGENT has taken on additional meaning. Before we conclude anything about AGENT or whatever other relationship might be present, let us examine certain other sentences which may be relevant to our concerns.

There are such sentences as

(192) John received some literature from the Alps

(193) Karl borrowed five dollars from the cookie jar

in which neither "the Alps" nor "the cookie jar" are in any way AGENTive. This observation is supported by the fact that there are no sentences like the following:

(194) *The Alps sent John some literature

(195) *The cookie jar loaned Karl five dollars

Nevertheless, there is at least one way in which "the Alps" and "the cookie jar" are like the animate nouns which appeared in the "from" phrases of the earlier sentences, (185)-(191): both objects referred to represent the source of the TRANSMITTIVE. Could it then be that we have encountered the first set of verbs which permit, perhaps even require, complex relationships? If the answer is affirmative, then "I" in (169) (I gave the book to the man) is both AGENT and what we shall now designate SOURCE. However, "the cookie jar" of (193) is not AGENT but simply SOURCE.

We now need to look for further support from other facts of English for our analysis. Let us examine the following to determine what relevant difference may exist between the two sentences:

(196) John received a wallet from George

(197) John stole a wallet from George

The meaning of, or event referred to by, the first requires George's participation, his initiation of the action, while the second clearly does not. This participation is further identified by the fact that the verb steal may appear with an inanimate as well as an animate SOURCE, though the verb receive cannot always appear with an animate and an inanimate SOURCE. Animateness, of course, is requisite to participation in, or initiation of, action. Thus, (198) is unacceptable though (199) is acceptable:

(198) *John received five dollars from the shelf

(199) John stole five dollars from the shelf

Both contain an inanimate LOCATIVE+SOURCE and the difference between steal and receive and, thus, the explanation for the different acceptability of the two sentences is that steal co-occurs with SOURCE and receive co-occurs with SOURCE+AGENT. We might also note that receive requires only a RECEPTIVE topical subject while steal requires an AGENT+RECEPTIVE topical subject.

Now we can define our new terms in this way:

SOURCE: THE ANIMATE OR INANIMATE ORIGIN OF SOME OBJECT, THE TRANSMITTIVE, WHICH IS TRANSFERRED IN AN ACTION REFERRED TO BY THE VERB

TRANSMITTIVE: THE OBJECT WHICH IS TRANSFERRED IN AN ACTION REFERRED TO BY THE VERB

RECEPTIVE: THE ANIMATE BEING TO WHICH THE TRANSMITTIVE IS TRANSFERRED IN AN ACTION REFERRED TO BY THE VERB

Let us now state the partial environments of the verbs we have been investigating in the following notation:

give: AGENT+SOURCE TRANSMITTIVE (RECEPTIVE)

receive: (AGENT+SOURCE) TRANSMITTIVE RECEPTIVE

steal: AGENT+RECEPTIVE (TRANSMITTIVE) $\left\{ \begin{array}{c} \text{(SOURCE+LOCATIVE)} \\ \text{(SOURCE)} \end{array} \right\}$

The sentences which these descriptions account for are illustrated by the following:

(200) John gave five dollars AGENT+SOURCE TRANSMITTIVE

(201) John gave Harry five dollars AGENT+SOURCE RECEPTIVE TRANSMITTIVE

(202) Harry received five dollars RECEPTIVE TRANSMITTIVE

(203) Harry received five dollars from John RECEPTIVE TRANSMITTIVE AGENT+SOURCE

(204) Merl steals daily AGENT+RECEPTIVE

(205) Merl steals money daily AGENT+RECEPTIVE TRANSMITTIVE

(206) Merl steals money daily from his mother AGENT+RECEPTIVE TRANSMITTIVE SOURCE

(207) Merl steals money daily from the bank
AGENT+RECEPTIVE TRANSMITTIVE SOURCE+
LOCATIVE

Other verbs like *give* are *send*, *lend*, *transfer*, *transmit*, *sell*, *distribute*; verbs like *receive* are *borrow* and *buy*; verbs like *steal* are *take*, *remove*, *rob*, *seize*. Obviously *give* and *receive* are identical except in the specification of their optional elements.

Let us examine the verb *acquire*, whose ambiguity may provide us with additional insight into the analysis we have just completed. In a sentence such as (208):

(208) Karl acquired a book from Herb

it is clear that "Karl" is the RECEPTIVE and that "Herb" is the SOURCE; however, it is not clear which person initiated the transfer, which person acted AGENTively. This observation is supported by the acceptability of (209), in which "Karl" acts AGENTively, and of (210), in which "Herb" acts AGENTively:

(209) Karl acquired a book from Herb when he pilfered Herb's library

(210) Karl acquired a book from Herb when Herb willed it to him

This ambiguity can be captured by the following description:

$$\underline{\text{acquire}}: \left\{ \begin{array}{ll} \text{AGENT+RECEPTIVE} & \text{(SOURCE)} \\ \text{(AGENT+SOURCE)} & \text{RECEPTIVE} \end{array} \right\} \text{TRANSMITTIVE}$$

The sentences which illustrate this account are the following:

(211) Mary acquired a new car when she spent her five thousand dollars AGENT+RECEPTIVE TRANSMITTIVE

(212) Mary acquired a new car from the Ford dealer when she spent her five thousand dollars AGENT+RECEPTIVE TRANSMITTIVE SOURCE

(213) John acquired a new car when his brother's will was read RECEPTIVE TRANSMITTIVE

(214) John acquired a new car from his brother when his will was read RECEPTIVE TRANSMITTIVE AGENT+SOURCE

The possible co-occurrence of INSTRUMENT with verbs of transference has not thus far been investigated. Let us now see what these possibilities are and whether they can reveal further facts which can contribute to our analysis. We would be likely to assume, from the results of the past investigations, that INSTRUMENT could appear wherever there is a specified or unspecified AGENT. This assumption is supported by such sentences as (215):

(215) Merl acquired a new car from me with five thousand dollars

in which "Merl" is unambiguously AGENT+RECEPTIVE and "five thousand dollars" is INSTRUMENT.[15] Further, we may add an

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[15] Clearly, this sentence may also mean that Merl received the car and the money, in which case "with" indicates accompaniment rather than INSTRUMENT; however, this meaning is not relevant to the present discussinn. Moreover, we should notice the subtle distinction between (215) and "Merl acquired

INSTRUMENT to (214), in which "John" is simply RECEPTIVE and "his brother" is complexly AGENT+SOURCE, and produce (216):

(216) John acquired a new car from his brother
with five thousand dollars

But (216) does not exhibit the same meaning relationships as (214) for it is only interpretable under the reading that "John" is AGENT+RECEPTIVE and "his brother" is SOURCE: the presence of INSTRUMENT apparently permits only this interpretation. The extent of this phenomenon is observable when we attempt to include INSTRUMENT in a sentence containing *receive*, which permits only RECEPTIVE topics and restricts AGENT to a "from" phrase including SOURCE:

(217) *John received a new record player from
Henry with twenty-five dollars

That this phenomenon is not determined by topicalization is shown by the unacceptability of (218) as well:

(218) *Henry gave a new record player to John with
twenty-five dollars

However, *buy*, though not *sell*, does accept an INSTRUMENT:

(219) John bought a new car with five thousand
dollars

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a new car from me for five thousand dollars," in which "for" designates the exchange of one item for another. In (215), however, the object of the "with" phrase may or may not have been exchanged, though it is INSTRUMENT. This observation becomes more apparent when the money, normally used in exchanges, is replaced by an object normally used in robbery, for example, a gun: "Merl acquired a new car from me with a gun."

(220) *Henry sold a new car with five thousand dollars

We can conclude that INSTRUMENT is highly constrained as a possible co-occurrent with verbs of transference and that our groupings of similar verbs, for example, receive with buy, is only accurate if we do not consider INSTRUMENT. Since a statement of the constraints of INSTRUMENT appears to be quite complex, we will not endeavor to make it at this time.

Let us turn now to the possible appearance of AGENCY in sentences containing verbs of transference. There are sentences like the following:

(221) The hurricane gave the fishermen a hard time

(222) The storm sent the children to their homes

However, these sentences do not have any counterpart containing receive:

(223) *The fishermen received a hard time from the hurricane

(224) *The children's homes received them from the storm

In addition, many other verbs such as lend and sell do not form acceptable sentences with AGENCY. These observations along with the fact that "a hard time" in (221) is not transferred from "the hurricane" to "the fishermen" suggest that such sentences are metaphorical rather than literal English sentences. We might well conclude, then, that AGENCY cannot occur with verbs of transference. However, we do have sentences such as (225):

(225) The wind blew the barn from the yard to the river

Here, "the yard" is like "the cookie jar" of (193), which we said was SOURCE, and "the shelf" of (199), which we said was LOCATIVE+SOURCE. It would seem, given our previous account of LOCATIVE+SOURCE, that each of the three is indeed the complex relation LOCATIVE+SOURCE. Now, in (225) it may be that "the river" is LOCATIVE+RECEPTIVE. These pairs of LOCATIVE relations would also explain the following sentence:

(226) John sent the candy from New York to Boston

in that both "New York" and "Boston" are obviously LOCATIVEs yet equally distinguishable by their respective similarities to SOURCE and RECEPTIVE relations.

The analysis of (225) should not be taken as an implicit claim that the verb blow has the same inherent characteristics as verbs of transference for it is a member of a quite different semantic class which was chosen to elucidate our investigation of AGENCY and verbs of transference.

Clearly, were we to accept the complex relation LOCATIVE+RECEPTIVE, we would have to redefine RECEPTIVE to accept both animate and inanimate referents. At this time, however, we will leave the question open to further factual support.

At an earlier point in our investigation of INSTRUMENT, we observed that the preposition with often appears in conjunction with INSTRUMENT. Of course, not every appearance of with signals that relation. We have, for example, sentences like these:

(227) Our dog is always running with that mutt down the street

(228) Leroy went downtown with his grandmother

(229) Some Spanish-Americans rioted with the blacks during the summer

(230) The old woman is sitting with her son in the park

It is clear that neither "the mutt," nor "the grandmother," nor "the blacks," nor "her son" is an INSTRUMENT in relation to the actions referred to by the respective verbs. The animals and people are simply accompanying the AGENTs in their actions. Thus, we have encountered a quite different type of relationship from the noun-verb relationships with which we have formerly dealt. In light of the fact that our original sentences, (227)-(230), remain acceptable if the "with" phrases are deleted, as we can see in (231)-(234), we can conclude that this new type of relationship is a sentence-noun relationship.

(231) Our dog is always running

(232) Leroy went downtown

(233) Some Spanish-Americans rioted furing the summer

(234) The old woman is sitting in the park

We shall term this accompaniment relationship between nouns and sentences COMITATIVE and we will define it tentatively as follows:

COMITATIVE: AN ANIMATE BEING WHICH IS ACCOMPANYING (ANOTHER ANIMATE BEING ENGAGED IN) AN EVENT

All of the above sentences are instances of the COMITATIVE as an animate object. Is it possible that this relationship includes inanimate things as well? If we substitute inanimates in place of the animate beings in these sentences, the result is as follows:

(235) *Our dog is always running with that tree down the street

(236) Leroy went downtown with his yoyo

(237) *Many Spanish-Americans rioted with the library during the summer

(238) The old woman is sitting with her straw hat in the park

These sentences would appear to indicate that an inanimate COMITATIVE per se is not a sufficient reason for a sentence to be judged unacceptable. Although we need to investigate, it may be that the nature of the activity determines the acceptability of the appearance of inanimate comitation, or accompaniment.

The first sentence, (235), is unacceptable apparently because trees cannot run; and the third, (238), because libraries cannot riot. But yoyos cannot go downtown and hats cannot sit in the park. The difference may be that (236) and (238) are interpreted in a way which indicates that they contain locative phrases: "in his pocket" and "on her head" respectively, while (235) and (237) are not interpretable in this way. Notice that if we alter (235) slightly, we are able to impose such a locative interpretation on the "with" phrase:

(239) Our dog is always running with the newspaper (in his mouth)

In animate comitative, then, the animate being in accompaniment is performing the same action as the AGENT; in inanimate comitation, the inanimate object is locatively associated with the AGENT while the AGENT performs the action. If our dog is running with a mutt, it is also true that the mutt is running with our dog; if Leroy went downtown with his grandmother, his grandmother went downtown with him; and so forth.

Animate comitation is not, however, always ascertainable from the animateness of the object in the COMITATIVE relation as the following sentence illustrates:

(240) *The bus went downtown with Jody

(240) is only interpretable if we supply a locative phrase such as "inside of it." In fact, the sentence is more likely to appear in the following form:

(241) The bus went downtown with Jody inside.

which suggests that "Jody" is not animate by necessity. She is not doing anything relevantly animate, for example, AGENTive or RESPONSIVE; rather she is being transported. "Jody," then, would be termed TRANSMITTIVE. We can conclude from these observations, as we did in the case of the OBJECTs of _shatter_ and _strike_, that it is not the object itself which determines the type of relation. In this case, it is the nature of the event which determines whether the COMITATIVE is relevantly animate or not.[16]

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[16] The nouns which our definition would identify as COMITATIVE do have to meet the condition of minimal specification: animate nouns meet the minimal specification of physical existence which is requisite to inanimate comitation, but inanimate nouns do not meet the minimal specification of organic life which is requisite to animate comitation. Obviously abstract nouns do not meet the minimal specification of even inanimate comitation: physical existence.

We can now investigate dimensions of comitation other than that of animateness. We have already seen, in locative comitation, the relevant dimension of space. What we need to determine is whether there are sentences referring to events in which spatial accompaniment does not involve temporal accompaniment and those in which temporal accompaniment does not involve spatial accompaniment. We have examined sentences in which people, animals, and physical objects are nominal referents within a comitative relation. Perhaps abstractions will provide examples of the COMITATIVE which will isolate one of the dimensions with which we are concerned. Let us, then, examine the following sentences:

(242) The fire started with the explosion

(243) People are learning more today about language with the revival of Cartesian ideas

(242) indicates a necessary temporal comitation: the fire started at the same time as the explosion. However, spatial comitation is not necessarily indicated in this sentence: the fire may have started across town from the explosion. The second sentence, (243), has no spatial relevance since abstractions of thought, "ideas," are only relatable temporally.

We may now raise the question as to which features of the comitative relationship are relevant to a decision to subtype COMITATIVE. Obviously space and time are two dimensions which could serve to distinguish different types of comitation. From the sentences we have examined, we can also observe that some of them contained accompanying events, some accompanying objects (for example, the locative comitation), and some accompanying AGENTs. Let us explore the consequences of using events, objects and AGENTs as the distinguishing features in subtyping the COMITATIVE. If these consequences are negative, then we may wish to use other features such as the spatial and temporal dimensions.

In the case of COMITATIVE-AGENT, it is the animate being which is duplicating the action of the AGENT within the sentence. Both spatial and temporal accompaniment are a part of the meaning. We can define this relation as follows:

COMITATIVE-AGENT: AN ANIMATE BEING THAT IS ENGAGED IN THE SAME ACTION AS THE AGENT AND IS SPATIALLY AND TEMPORALLY ACCOMPANYING THE AGENT

In the case of COMITATIVE-OBJECT, there is a physical object whose relationship to the referent of the subject is locative. Since physical existence is its minimal specification, it may be either animate or inanimate. Since it exists in an explicit or implicit locative relationship, spatial comitation is primary, though temporal comitation is entailed. We can define this relation as follows:

COMITATIVE-OBJECT: A PHYSICAL OBJECT, ANIMATE OR INANIMATE, THAT IS LOCATIVELY ACCOMPANYING THE REFERENT OF THE SUBJECT

In the case of COMITATIVE-EVENT, we have an eventive noun whose relationship to the event referred to by subject, verb and object is necessarily temporal though only ambiguously spatial. We can define this relation as follows:

COMITATIVE-EVENT: AN EVENT WHICH IS TEMPORALLY (AND, OPTIONALLY, SPATIALLY) ACCOMPANYING THE EVENT REFERRED TO BY SUBJECT, VERB AND OBJECT

It is interesting that there are apparently no sentences in which comitation with the "direct object" is possible. For example, (244)--(248) are unacceptable and (249)--(253) are acceptable only as COMITATIVE-AGENT:

(244) *John built his house with the church

(245) *Harry robbed the bank with the supermarket

(246) *Mildred broke the vase with the chair

(247) *John's wife slapped him with George

(248) *The appearance of the striped dog surprised Henry with Mary

(249) Millie robbed the jewelry store with Harry

(250) John built his model airplane with his friend

(251) Leroy broke all the school windows with Peter

(252) Herman beat up the intruders with his friends

(253) Norman jumped the fence with his dog

While this analysis might appear to be satisfactory, we have actually created a number of problems. First, there is the fact that we have no sentences such as

(254) *John was surprised by George with Mary

though "Mary" is RESPONSIVE and, therefore, does not fall within our COMITATIVE subtypes. However, we do have such sentences as (254) in which the preposition "with" is replaced by "along with." For example, (255):

(255) John was surprised by George along with Mary

In addition, along with permits "direct object" comitation as

(256) illustrates:

(256) George surprised John along with Mary

Since the differences between with and along with are superficial, we do not need to state the various environments in which either the one or the other may appear. More to the point is a statement of the facts concerning the appearance of COMITATIVE-RESPONSIVE. We can simply observe that RESPONSIVE accompaniment has the same requirement of animateness which AGENT accompaniment has. Perhaps the best way to deal with this fact is to incorporate the characteristics of RESPONSIVE into our earlier definition. This change can be made in the following way:

COMITATIVE-AGENT/RESPONSIVE: AN ANIMATE BEING THAT IS ENGAGED IN THE SAME ACTION AS THE AGENT/RESPONSIVE AND IS SPATIALLY AND TEMPORALLY ACCOMPANYING THE AGENT/RESPONSIVE

Since we have concluded what we wish to investigate of the consequences of using AGENT/RESPONSIVE, objects, and events to subtype COMITATIVE, let us turn to the alternative method of using simply the dimensions of space and time to accomplish the subtyping. In the case of COMITATIVE-SPATIAL, it is some physical object or event which accompanies some other physical object or event. In the case of COMITATIVE-TEMPORAL, it is some event which accompanies some other event in time. Thus, we can present the following definitions:

COMITATIVE-SPATIAL: A PHYSICAL OBJECT OR EVENT WHICH ACCOMPANIES ANOTHER PHYSICAL OBJECT OR EVENT IN A RELATION SIGNALED BY WITH OR ALONG WITH

COMITATIVE-TEMPORAL: AN EVENT WHICH IS TEMPORALLY CONTIGUOUS WITH SOME OTHER EVENT IN A RELATION SIGNALED BY WITH OR ALONG WITH

To demonstrate the usefulness of this subtyping, we must find sentences in which only one type or the other can appear. Such restrictiveness will, no doubt, depend partly on the nature of the verb within these sentences. Verbs which co-occur with abstract objects seem to appear with only COMITATIVE-TEMPORAL. Verbs of cognition such as think of, understand, know, contemplate represent a class of verbs which co-occur with abstract objects. The following sentences illustrate the exclusively temporal form of accompaniment which such verbs impose:

(257) Karl thought of Mary's problem along with George's

(258) Peter understood the causes of the riots along with the causes of poverty

(259) Harry knew the answer to the first question along with the answer to the second

(260) Larry contemplated his wife's decision along with his best friend's

On the other hand, be+LOCATIVE seems to appear in sentences where only a COMITATIVE-SPATIAL interpretation is possible, For example:

(261) Hortense is with her husband in the store

(262) Maudie is in the kitchen with her boyfriend

(263) The salt is on the table with the sugar

(264) My knife is in the drawer with the socks

The fact that spatial accompaniment has to entail temporal accompaniment is not a problem if this information is provided by separate entailment rules. This situation is quite different from that of (242) (The fire started with the explosion) in which temporal comitation is clearly indicated though spatial comitation may or may not be.

From our analysis we can describe, in terms of COMITATIVE, the environments of some illustrative verbs in the following way:

think of: (COMITATIVE-TEMPORAL)

be+LOCATIVE: (COMITATIVE-SPATIAL)

Now we are in a position to make a decision concerning the most adequate analysis of comitation. We have found that, when we subtype by the dimensions of space and time, COMITATIVE-SPATIAL includes the phenomena described by the two former subtypes COMITATIVE-AGENT/RESPONSIVE and COMITATIVE-OBJECT, which now may be viewed as particular forms of spatially correlated referents. Obviously, were we to list all of the referents which could be appropriately correlated spatially and provide subtype terms for them, we would have an inordinately long and unrevealing list. In fact, such dissection might prove to be endless. Further, we would be led to list all possible combinations of individual referents--animate-inanimate, animate-animate, inanimate-inanimate, abstraction-abstraction, event-event, for example--another endless task. The temporal-spatial dichotomy as captured in COMITATIVE-SPATIAL and COMITATIVE-TEMPORAL, which, we might add, subsumes our former category COMITATIVE-EVENT, suffers from neither of these faults. Thus, unless a very convincing argument should arise from hitherto uninvestigated data, we will retain our latest analysis.

Let us return to a topic we touched on when we dealt with verbs of transference. We suggested that before the action referred to by the verb transpired, the object in question, the TRANSMITTIVE, was in possession of the SOURCE and that after the action it was in possession of the RECEPTIVE. There are sentences which reflect exactly this possessive relationship. For example:

(265) That old purse belongs to my daughter

(266) My father owns a cabin in Canada

(267) John has a new yacht

What is the nature of verbs like have, belong, own? Unlike the other verbs we have examined, these do not involve action: one does not have to do anything except exist in order to "have" or "own" something. The differences between these verbs do not seem to affect the relevant fact of possession. For instance, own means legal possession of something which has monetary value. But this is not unambiguous for I can say that I own a car with the knowledge that my neighbor or a thief is in immediate possession of it. Likewise I can say that I have a car when in fact my friend has present use of it. However, I cannot say that I have a car if a thief has stolen it; nevertheless, I can say that the car belongs to me though the thief has indeed made off with it. On the other hand, I can with equal linguistic appropriateness say that my neighbor's car, which is parked in my driveway and is at my disposal, is a car which I have at the moment. Moreover, had I stolen a car, I could again appropriately say that I have a car. Yet, in this latter situation I could not say, unless I were a liar as well, that the car in my possession belonged to me.

There are thus multiple kinds of possessive relationships, only some of which we have touched upon. We could, if we wished, extend these into familial relationships and point out that I could say I own a wife (if I had either purchased or been deeded her), or have a wife, uncle, father, and so forth. But I could not say appropriately that I own my father or that my father belongs to me. The various types of "having," or possession, then, can overlap in interesting and complexly restricted ways. One fact remains clear though; in every case where it is appropriate to use any of the verbs of possession there is some fundamentally identical possessive relationship in the connection between the two referents in the sentence. Our task is to deal with the underlying commonality rather than with the idiosyncracies of the various verbs.

We might attempt to discover the precise nature of possession, but this would take us into a discussion of, among other things, psychology. The nature of have, own, belong, possess, and the like, depends on psychological, legal, familial, spatial, and other factors. Despite the temptations to enter this maze, we shall remain satisfied to state that this relationship between two objects is one of possession.

What can, generally speaking, be in possession of something? Sentences (265)-(267) all have people as possessors. Let us examine the following sentences for their acceptability:

(268) That old shoe belongs to my dog

(269) My Saint Bernard owns a cabin in Canada which his former master left him

(270) Our tropical fish have a new acquarium

(271) Cats possess an instinct for stalking

(272) *That old shoe belongs to the desk

(273) *John's watch owns a new second hand

(274) *My desk has a new typewriter

(275) *Roses possess a fine aroma

These two sets of sentences suggest that only animate beings can be possessors. If this observation is accurate, then what kinds of things can be possessed? Let us examine the following sentences:

(276) The credit for the success of the rally belongs to many people

(277) John has a fine idea for achieving unity

(278) The Minnesota Senator possesses qualities many should emulate

(279) This girl belongs to my best friend

(280) Blake had a loyal wife

Apparently abstract as well as concrete entities and inanimate as well as animate objects can be possessed. We do, however, need to recognize the existence of such non-sentences as

(281) *Many people own these ideas (acceptable if ideas are patentable)

(282) *John owns the credit for the success of the play

(283) *The car that I just bought belongs to Harry

(284) *Karl possesses three intelligent children

However, their unacceptability results from a violation of the idiosyncratic constraints imposed by the particular meaning of the verbs. Since own designates a legal and monetary connection between possessor and possessed, these sentences, (281)-(284), are not counterexamples to the claim that possessed "objects" may be of almost unlimited types.

We may feel now that the verbs under examination are not really "verbal" at all--that they do not indicate activity; that instead they indicate a pure relationship between two objects whose conceptual content is not generalizable like that of, for example, AGENT, which is generalized by the very fact that it enters into relationship with numerous types of verbs. We have only to try to think of any other set of verbs which would use either the concept possessor or possessed. We are dealing with a distinctive relationship, therefore, between nouns, not between a noun and a verb: AGENT signifies a connection between an animate being and an action which is a member of a large set of semantically quite different actions. However, a possessor is in a state in connection with a possessed and can never enter into any other relationship, by definition. Therefore, the most accurate term for this connection is POSSESSIVE.

POSSESSIVE: THE RELATIONSHIP BETWEEN AN ANIMATE BEING AND SOME CONCRETE OR ABSTRACT OBJECT, SUCH THAT THE ANIMATE BEING CAN BE SAID TO EXERCISE SOME FORM OF CONTROL OVER THE OBJECT.

If we wish to distinguish the two members of this relationship, we may use the terms POSSESSOR and POSSESSED, which are simply a means of focusing on one member or the other of the unitary set.

POSSESSOR: AN ANIMATE BEING WHICH MAY BE SAID TO EXERCISE SOME TYPE OF CONTROL, AS REFERRED TO BY THE VERB, OVER THE OBJECT.

POSSESSED: AN OBJECT, PHYSICAL OR ABSTRACT, WHICH MAY BE SAID TO BE UNDER THE CONTROL, REFERRED TO BY THE VERB, OF SOME ANIMATE BEING

Additionally, to classify verbs like _have_ in a manner similar to the environmental classification of other verbs, we will need to have the concepts POSSESSOR and POSSESSED. For example, in the case of _own_, the form would be:

own: POSSESSOR POSSESSED

Such a specification indicates that the verb _own_ requires both POSSESSOR and POSSESSED:

(285) *John owns

(286) *A new car owns

Moreover, other verbs of possession such as _have_ and _belong to_ have identical case environments. Thus, English does not permit the following either:

(287) *Mary has

(288) *A book has

(289) *This old car belongs (to)

(290) *Mervin belongs (to)

The fact that the verb belongs to permutes POSSESSOR and POSSESSED is an idiosyncratic fact about the syntactic requirements of the verb itself and is not relevant to a discussion of its meaning. If both own and belong to met the semantic requirements of some sentence-in-formation, belong to might be chosen to make a topical subject of POSSESSED. Thus, there is the topical difference between (291) and (292):

(291) This car belongs to my brother

(292) My brother owns this car

There is a set of sentences which apparently contradict our claims about possession in that they contain inanimate as well as animate objects as POSSESSOR and are restricted to the verbs have and belong to. The following illustrate this type:

(293) This cap belongs to that thermos bottle

(294) The desk I bought has a detachable top

(295) The motor on the hoist over there belongs to my car

(296) My typewriter has two interchangeable keys

(297) The ship we sailed on had seven decks

While it would appear that the relationship illustrated in these sentences is the same as that in previous sentences, it is true that all of the "POSSESSED" objects in (293)-(297) are a part of their "POSSESSOR," unlike those of previous sentences. This semantic difference is reflected in the way one type of phrase appears in English. For example, the "true" possessive takes the form "X of Y's," while part-whole takes the form "X of Y." This difference is revealed in the following sets of sentences:

(298) The car of Mary's is old and decrepit

(299) The house of my neighbor's needs painting

(300) That watch of mine never keeps the correct time

(301) That old shoe of my dog's is his favorite toy

(302) The top of the table is detachable

(303) The cap of the thermos bottle is under the chair

(304) Two keys of my typewriter are interchangeable

(305) The seven decks of the ship we sailed on were well painted

Moreover, inanimate part-whole either "Y X" or "Y's X," while the possessive forms only "Y's X." For example:

(306) Mary's car is old

(307) My neighbor's house needs painting

(308) My watch's small hand is bent

(309) My dog's shoe is his favorite toy

(310) The table top is detachable

(311) The thermos bottle cap is under the chair

(312) My typewriter keys are interchangeable

(313) The ship decks were well-painted

Further, when the POSSESSED is removed from the POSSESSOR, the POSSESSOR is not affected as a being, but when the part is removed from the whole, the whole is altered. This alteration is more acutely noticeable when examples are considered which include animate beings. The following illustrate this point:

(314) My secretary has beautiful blue eyes

(315) John has only one arm

(316) Harry has a somewhat large head

Yet this is only true because animate objects tend to be more singulary in their being, less separable into individually functioning parts, than inanimate objects. Syntactically, animate part-whole appears in the form "X of Y" as does inanimate part-whole, but the former does not appear in the form "Y X." Therefore, sentence (317) is unacceptable while (318) is acceptable.

(317) *My secretary eyes are fun to observe

(318) The eyes of my secretary are fun to observe

We can summarize our finding about the forms in which the various possessives appear in the following way:

	ANIMATE		INANIMATE	
	part-whole	possessive	part-whole	possessive
Y's X	+	+	+	+
Y X	-	-	+	+
X of Y	+	-	+	+
X of Y's	-	+	-	-

It is also true that a whole has, or possesses, parts. This suggests that there is an overlapping between the categories of possession and part-whole; indeed, it suggests that part-whole is a subset of possession. How would it be possible for us to account for this observation of this relationship? In order to represent this, we need a pair of terms which will appropriately divide possession into part-whole and non-part-whole. Since the peculiar characteristic of part-whole is the alteration of the whole resulting from a removal of a part and since removal of a possessed does not necessarily alter the possessor, we may use this distinction as the one which is of particular semantic relevance. Part-whole possession will, then, be termed INALIENABLE POSSESSION and non-part-whole possession ALIENABLE POSSESSION.[15]

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[15] These terms were adopted from Fillmore, "The Case for Case."

INALIENABLE POSSESSION: THE RELATIONSHIP BETWEEN AN ANIMATE OR INANIMATE OBJECT AND SOME PART OF THAT OBJECT SUCH THAT THE FORMER CAN BE SAID TO CONSTITUTE THE WHOLE AND THE LATTER A PART OF IT

ALIENABLE POSSESSION: THE RELATIONSHIP BETWEEN AN ANIMATE OR INANIMATE OBJECT AND SOME OTHER OBJECT SUCH THAT THE LATTER CAN BE SAID TO BE UNDER THE NOMINAL CONTROL OF THE FORMER

Moreover, these two types of POSSESSION, like our original term POSSESSIVE, can be further analyzed into the sub-classes POSSESSED and POSSESSOR.

INALIENABLE POSSESSOR: THE ANIMATE OR INANIMATE OBJECT WHICH IS SAID TO BE THE WHOLE WHICH CONTAINS PARTS

INALIENABLE POSSESSED: THE INANIMATE OBJECT WHICH IS SAID TO BE THE PART CONTAINED BY SOME WHOLE

ALIENABLE POSSESSOR: THE ANIMATE OR INANIMATE OBJECT WHICH IS SAID TO EXERCISE SOME NOMINAL CONTROL OVER SOME OTHER OBJECT

ALIENABLE POSSESSED: THE ANIMATE OR INANIMATE OBJECT WHICH IS SAID TO BE UNDER THE NOMINAL CONTROL OF SOME OTHER OBJECT

We should note that we have extended our category of ALIENABLE POSSESSION to include inanimate POSSESSORs. Obviously the kind of nominal control which they can be said to have over their POSSESSED is more restricted than that of animates. This control usually, if not always, has a locative meaning.

(319) The ship has seven lifeboats

(320) The playground has a slide and some swings

(321) This desk has a typewriter and an adding machine

Each of these sentences is paraphrasable in similar ways involving locative phrases containing the POSSESSOR, as the following sentences reveal:

(322) The ship has seven lifeboats on it

(323) The playground has a slide and some swings in it

(324) Your desk has a typewriter and an adding machine on it

(325) There are seven lifeboats on the ship

(326) There are a slide and some swings in the playground

(327) There is an adding machine and a typewriter on your desk

(328) Seven lifeboats are on the ship

(329) A slide and some swings are in the playground

(330) A typewriter and an adding machine are on your desk

Should we wish to do so, either now or at a future time when additional facts about the language warrant, we could divide ALIENABLE POSSESSION into the categories LOCATIVE POSSESSION to account for inanimate ALIENABLE POSSESSION and PERSONAL POSSESSION to account for animate ALIENABLE POSSESSION.

Let us return briefly to our earlier discussion of the AFFECTIVE in the light of our latest analysis of possession.

We left unresolved our analysis of (142)

(142) My brother cut himself on the foot at the swimming pool

since we were then unable to determine the status of "himself on the foot" or its variant "his foot" with regard to the AFFECTIVE. We have just observed that inanimate ALIENABLE POSSESSION often indicates a locative possessor explicitly. In the case of inalienably possessed parts such as foot, it is the possessed which often appears as a locative. The difference is one of the location of the possessor with respect to the possessed versus the location of the possessed with respect to the possessor. The value for our problem with the AFFECTIVE is, however, in the POSSESSOR-POSSESSED connection as we have seen it. The reason for the oddity of our question whether the part or the whole was affected now becomes clear. (142) states that it was the foot which was cut and yet the very intimacy of the POSSESSOR-POSSESSED relationship leaves us with the impression that the whole must also be affected, as it indeed must be. Nevertheless, this knowledge is not the meaning of the sentence; rather it is the entailed meaning because of the implication of part-whole. Thus, if we say that "foot" is LOCATIVE+INALIENABLE POSSESSED+ AFFECTIVE and that "himself" is INALIENABLE POSSESSOR, we are saying in effect, that the sentence in question means:

(331) My brother cut his foot at the swimming pool

but that it entails by reason of possession

(332) My brother cut himself at the swimming pool

Thus the difference between (142) and its variant containing "his foot" is simply the presence of LOCATIVE in the former and the absence of it in the latter. But this difference is relatively superficial in view of the facts about INALIENABLE POSSESSION, specifically part-whole.

It should be pointed out in conclusion to this very general discussion of possession that the concept is a broad one which can incorporate many other relationships; that it is static, not active; that it involves objects or nouns, therefore, and not events; and that it is the least "verbal" of the relationships thus far encountered. This last observation brings us to one of the major points of our approach to language. Verbs, in a grammatical sense, have two major functions. The first is to refer to some phenomenon in the world like running or hitting. The second, and the one which we have seen prepositions share, is to demonstrate a relationship between people, animals, objects, or ideas. Granted that these two functions are sometimes complexly interrelated, within particular lexical items, yet they are distinct in that the former deals with referents while the latter deals with relations.

As we began by stating that verbs were a key to various relationships as determined logically by their meanings, so we ended by discovering that there are many relationships determined by lexical items within other grammatical categories. What we have, therefore, is a fundamental identity between the root function of categories like preposition and those like verb. Such a discovery should lead us in further analysis to deal extensively with categories other than verb—like preposition, adverb, adjective—in a manner not unlike that which has just been illustrated. Nouns may be purely referential; prepositions, relational; and verbs, both. But this is another investigation.

In general conclusion, we can state certain principles of our methodology as well as state our results; and we can indicate the motivation and concerns of our approach. We have assumed that there are two aspects of language which are related in specific ways: one aspect is that of meaning and the other is that of form. The meaning of language is based on the particular ways in which people perceive the world and the way these perceptions and their sub-parts are related. The form of language is based on the number, kind and order of words which appear with some specifiable regularity. The only way we can study meaning is through its relationship to form and through our own intuitions about the nature of meaning. When we examine a word it is in the context of real or imagined sentences, and when we examine sentences it is with particular attention to the words. In order to determine facts about meaning, we have to capture it in as many forms as possible since we believe that meaning differences are reflected in sometimes subtle differences in form. Therefore, paraphrase is an essential part of our methodology in that it can reveal the consistent ways in which a set of similar meanings may appear in sentences: paraphrase can provide syntactic evidence for semantic character.

The notion "grammatical category" has the same two aspects of meaning and form. The form of a word like paint in the sentences we examined is grammatically in the category verb; however, the meaning of paint is nominal. This difference in category is essential for our analysis, as we have seen. We can state this difference with the terms GRAMMATICAL CATEGORY and SEMANTIC CATEGORY.

The discovery of the difference between words which have a referential function and those which have a relational function is probably the single most important conceptual and methodological principle we have for it has provided us with the present results.

We have used the principle of semantic economy in determining and stating analyses. This principle states that when there is a choice between two statements which are equally accurate and consistent, that statement is chosen which makes the most fundamental delineation between types of relationships. In other words, the fewer distinctions that can be made while still accounting for all relevant semantic and syntactic facts, the more optimal is the analysis.

We have had to distinguish between apparent meaning, underlying meaning and entailed meaning. Apparent meaning involves only the words which actually appear in a given sentence; underlying meaning involves what is necessary for us to understand the apparent meaning; and entailed meaning involves the application of knowledge about the real world in order to determine what must be true as a result of, concomitant with, or prior to, the underlying meaning of a sentence. The first we are given, the second must be discovered, and the third recognized and put aside if the analysis is to be fruitful.

The following are a number of questions used in the investigation of certain verbs and prepositions in order to determine what the semantic relations and referents are. These undoubtedly need extension and modification as new data are examined:

1. Does the verb or preposition refer to any action?

2. What is the nature of the action? Organic, mechanical, or other?

3. Where does the action take place? Within or between objects?

4. What is unspecified in the sentence?

5. What is the result of the action?

6. What are the syntactic properties of the verb in terms of its appearance alone with AGENT, INSTRUMENT, AGENCY and the various object types?

7. What are possible paraphrases of the sentence? Can any of the constituents appear as different grammatical categories in a paraphrase?

8. What is the fundamental semantic category of the constituent under examination?

9. What are the characteristics of the nouns or sentences which can be in correlation with the verb or other constituent under examination? Concrete, Abstract, Human, or other?

10. What are the dimensions of reality referred to by the word under investigation? Temporal, spatial, or other?

III SEMANTIC STRUCTURES

> The surface structure . . . does not directly express the meaning relations of the words, of course, except in the simplest cases. It is the deep structure underlying the actual utterance, a structure that is purely mental, that conveys the semantic content of the sentence.[1]

Before we investigate the possitility of developing a new system which will generate semantic structures, let us investigate the possible modifications of existing systems which might be compatible with the results of Chapter II. Immediate Constituent analysis and Transformational Immediate Constituent analysis have already been ruled out since they do not reflect deep structure identity between similarly understood sentences. Further the deep structures of the latter do not manifest the facts of logical semantic constituent order and inter-dependency. For example, an antecedent event is temporally prior to a consequent event and ought to be represented as such in a deep structure insofar as diagrammatic conventions will permit; also, a consequent event is dependent on an antecedent event and ought to be represented as such, while an antecedent event may be independent and ought to be represented as such. Finally, neither of these two "grammars" deals with the problem of intralexical structure.

---

[1] Noam Chomsky, Cartesian Linguistics (New York and London: Harper and Row 1966), p. 35.

A small number of sentences containing the verb open in various combinations of case relationships will serve to illustrate several types of "deep structure" diagrams.

(1) John opened the door
(2) The key opened the door
(3) The door opened[2]
(4) John opened the door with the key
(5) John used the key to open the door

---

[2] We are assuming that open appears with AGENT and not AGENCY in order to simplify the following discussion. Such an assumption does not affect the validity of our conclusions since they would, in the case of AGENCY, be parallel to those about AGENT. After we have determined one or more satisfactory systems, we shall illustrate in more detail their ability to deal with more complex sets of relationships and alternatives in fundamental forms.

It may be possible to use a modified form of the syntactic phrase structure rules developed by the Transformationalists. One modification would be the addition of a component to insert appropriate semantic information and to assure appropriate semantic order and dependencies of deep structure constituents. The rules of the Transformational phrase structure component are illustrated by the following:[3]

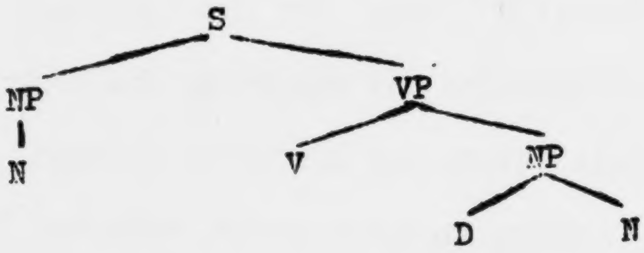
$$S \longrightarrow NP\ VP$$

$$NP \longrightarrow \begin{Bmatrix} (D)\ N \\ S \end{Bmatrix}$$

$$VP \longrightarrow V\ (NP)$$

These rules will generate a diagram of the form illustrated in Figure 3.

Figure 3

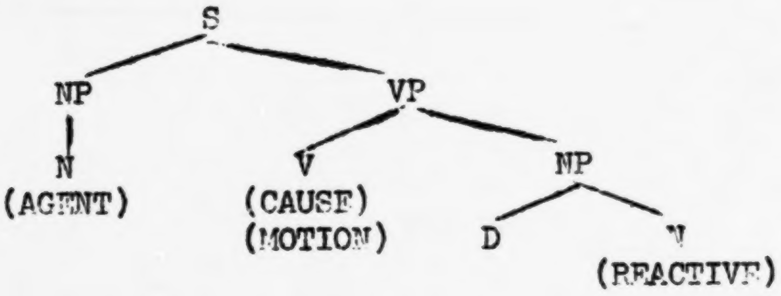


The terminal symbols--N, V, D, N--and the non-terminal symbols--S, NP, VP--represent syntactic categories. If we formulated a sub-component containing rules which, for every terminal syntactic category, supplied a set of one or more semantic features, for example, case relationships, the operation of such a sub-component would convert the diagram of Figure 3 into that of Figure 4.

---

[3] These rules are given incompletely since they are only used to illustrate their potential value in meeting our requirements.

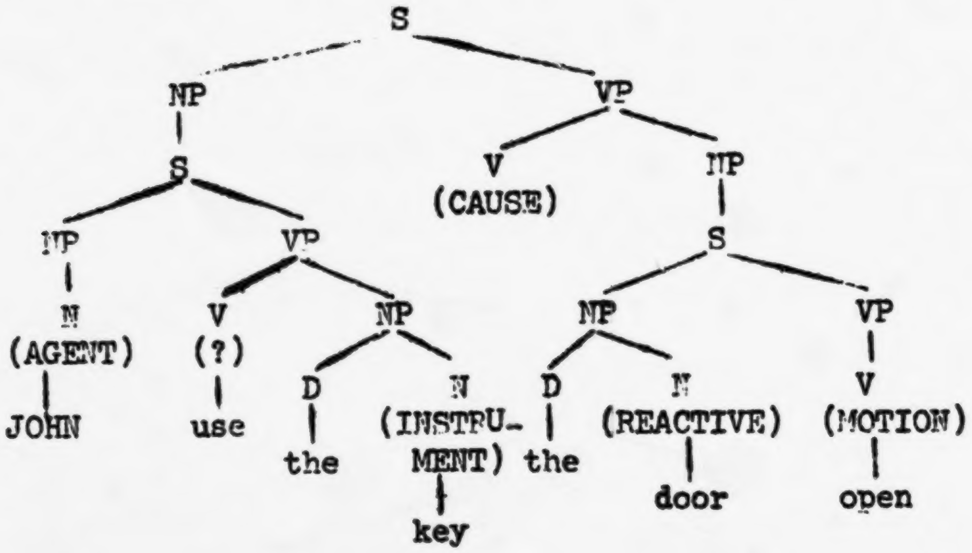
Figure 4



If an AGENTive noun is semantically prior to its action or effect and if we adopt the convention that semantic priorities will be represented in decreasing order from left to right in a diagram, it is appropriate that AGENT should appear as the leftmost N. Then, the sub-component must read the syntactic configuration and guarantee the accurate placement of semantic labels within the syntactic diagram.

While Figure 4 would, with the insertion of the correct lexical items, account for sentences (1) and (3), it would not account for the other related sentences. However, a further application of the syntactic phrase structure rules and subsequent operation of our required sub-component could produce the structure in Figure 5.[4]

Figure 5


S
NP
VP
S
V
(CAUSE)
NP
NP
VP
S
N
(AGENT)
V
(?)
NP
NP
VP
JOHN
use
D
the
N
(INSTRU-
MENT)
key
D
the
N
(REACTIVE)
door
V
(MOTION)
open

This diagram has the advantage that all of the semantic elements have an order which conforms to the semantic structure of our sentences if the diagram is read from left to right. It accounts for (1), in which the INSTRUMENT is unspecified and does not appear and in which CAUSE is incorporated; (2), in which the AGENT is unspecified and CAUSE is again incorporated; (3), in which both AGENT and INSTRUMENT are unspecified and CAUSE incorporated; (4) in which INSTRUMENT is rendered as a prepositional variant and CAUSE incorporated; and, finally, (5), in which all elements except CAUSE, which is incorporated, are superficially present. Additionally, this structure contains the sub-structure which accounts for (6):

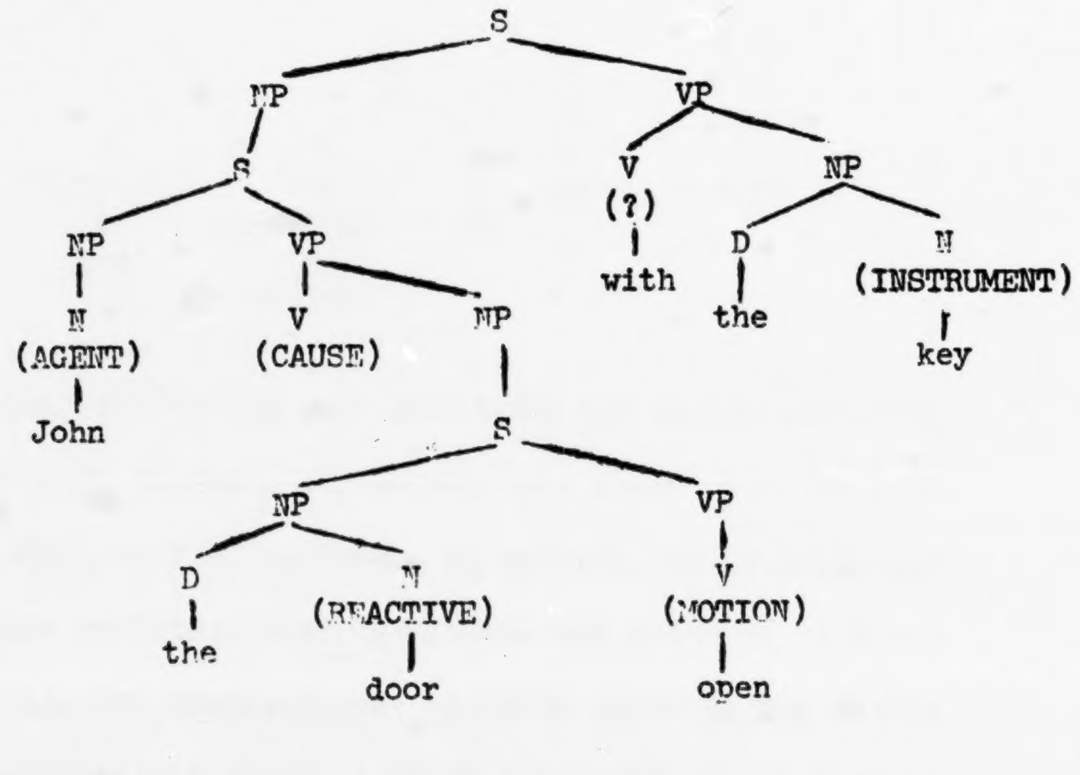
---

[4] Henceforth, illustrative sentences will be referred to by a numeral enclosed in parentheses; illustrative figures, by the term "Figure" and a numeral.

(6) John used the key

Our rules will generate not only the diagram of Figure 5 but also that of Figure 6, below. How are we to determine which diagram is a more isomorphic representation of the semantic structure of (1)-(5)?

Figure 6


S
NP
VP
S
V
(?)
with
NP
D
the
N
(INSTRUMENT)
key
NP
N
(AGENT)
John
VP
V
(CAUSE)
NP
S
NP
D
the
N
(REACTIVE)
door
VP
V
(MOTION)
open

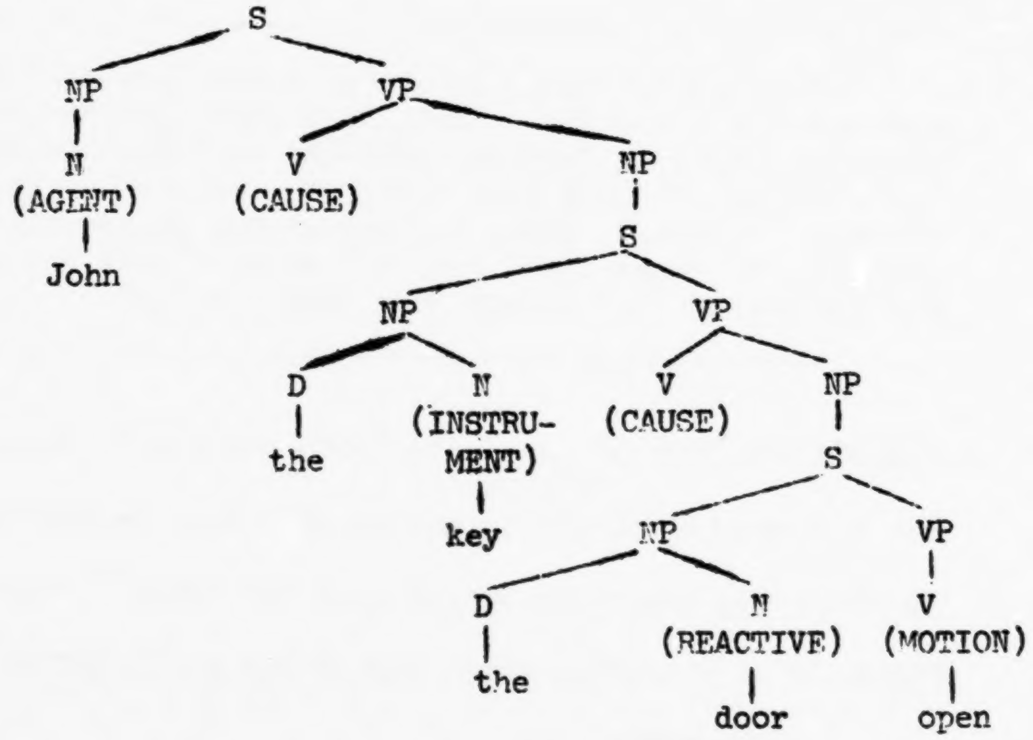
The answer must be in the way the diagram is "read." In Figure 6 we "read" that the AGENT CAUSES X where "X" is "the door to open."[5] Moreover, we "read" that the entire unit--"John's causing the door to open"--is "with the key." Clearly, this is not the meaning of (4) or any of the other sentences in our set. Further, use cannot be substituted for "with." The diagram in Figure 6 is a configuration suited for a COMITATIVE relationship, not an INSTRUMENTal one.

There are, in addition, a number of configurations more in keeping with the meaning of (4). One of these is represented in the following figure:

---

[5] The relevant facts involved in the "reading" of a diagram are the following: first, NP's have "it" force--whether they are simple or complex, NP's can be "read" as the pronominal "it"; second, V's are read simply in the form of their semantic content. Figure 5, then, is read at the highest level as "it cause(d) it" where the first "it" equals "John use(d) the key" and the second "it" equals "the door open(ed)."

Figure 7


S
NP
VP
N
(AGENT)
John
V
(CAUSE)
NP
S
NP
VP
D
the
N
(INSTRU-
MENT)
key
V
(CAUSE)
NP
S
NP
VP
D
the
N
(REACTIVE)
door
V
(MOTION)
open

A choice between Figure 5 and Figure 7 is more difficult since the order elements is the same for both. The dependency relationships differ as do the relative complexities of the two diagrams. Again, the "reading" must be decisive in the choice. Beginning from left to right and from top to bottom, we can read: "John cause(d) it" where "it" includes "the key," "cause(d)," and "the door open(ed)"; "the key cause(d) it" where "it" includes "the door" and "open(ed)." We can now raise the question whether the following paraphrases are semantically well-formed:

i. The door opened

ii. The key caused the door to open

iii. John caused the key to cause the door to open

iv. John caused the key to open the door

iv., which incorporates the second occurrence of "CAUSE" into open, is a more acceptable form of iii. Even if these paraphrases of Figure 7 were all semantically well-formed--we can question the validity of the key causing--we have no way of accounting for the "with" of (4) and the "use" of (5) if they are fundamental semantic units within the sentence and not merely superficial syntactic signals. We might claim that "with" is purely relational--without reference[6]--as we did in Chapter II; and that, since case relations are N labels without independent status in the diagrams, the preposition "with" and other purely relational units are only realizations of N labels. Two problems arise from this claim. First, the status of "use" in Figure 5 is questionable since, as a variant of the INSTRUMENTal "with," it ought to derive from some N label while Figure 5 shows it as an independent V. Second, "CAUSE" should not appear independently under a V since it is relational and not referential, but rather as a label on some N, consistent with the method of handling case relations.

---

[6] The term "reference" is based on the following concept: some lexical item or pre-lexical unit may be said to refer when it has an isomorphic connection to an object, action, state, or event in the world as perceived by the mind of the speaker-hearer. The term REFERENT as it is used later in this chapter is based on this concept in contradistinction to the concept RELATION, which corresponds only to a set of semantic connectives with which the mind is able to organize various REFERENTs into cognitive sets.

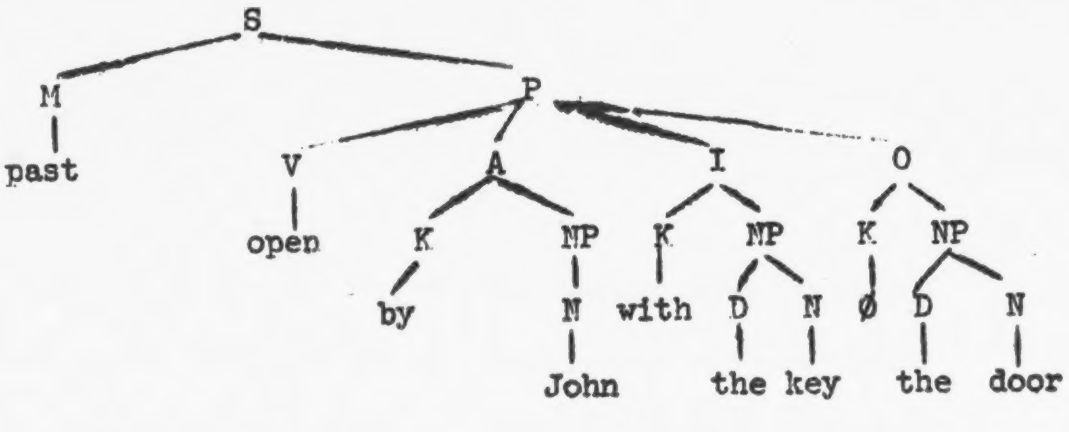
In an attempt to overcome these difficulties we could hypothesize that the relational units appearing under V's signal the relationship between the preceding and following NP's; that the relational units appearing as N labels signal the relationship between those N's and the referential content of the nearest V.[7] In our example only the rightmost V is referential: (MOTION). Thus, all of the N's would bear their labeled relationships to V--(MOTION)--open. "Use" or "with," being relational, signals the relationship between "John" and "the key" while the label AGENT signals the relationship between "John" and "open" and INSTRUMENT signals that between "the key" and "open." Consequently, "CAUSE" relates the NP, "John used a key," to the NP, "the door opened." This solution is, however, obviously ad hoc and only partially effective since there is still the problem that N's are referential and labeled relational while V's, in this latest proposal, may not be referential if labeled relational.

---

[7] It must be the nearest V since more complex diagrams would naturally present the problem of determining which V is in what particular relationship to which N.

There are further difficulties with this system, such as the status of the VP and the fact of an imposed semantics on an essentially syntactic base. Let us look at Fillmore's case grammar[8] to determine how well it sorts out the semantic functions of reference and relation. Since Fillmore would view open as a simple rather than a complex verb, the following diagram represents the case grammar "deep structure" of (4).

Figure 8

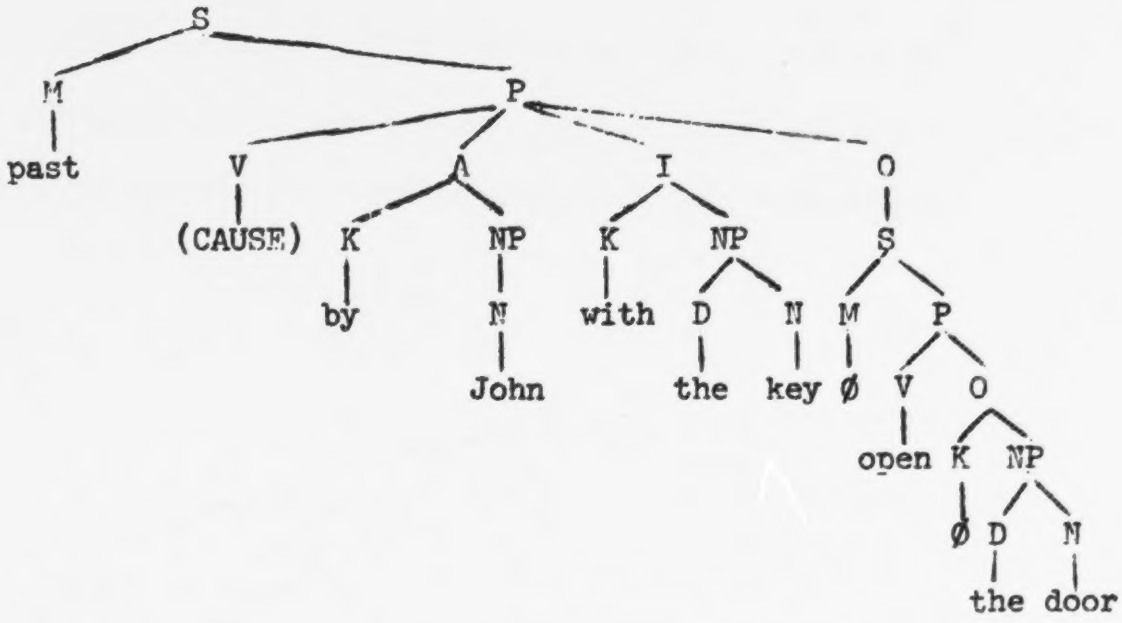


Here, while the case labels--O(bjective), A(gentive), I(nstrumental)--technically designate the relations, the presentational appearance suggests that K(asus, or case marker) might be adapted to assume the relational function, leaving the N's and V to assume the referential function. If we use Fillmore's device for complex P(roposition)s, namely that O(bjective) may be optionally rewritten as S(entence), we can represent our own conclusions about the complex nature of open in the following manner:

---

[8] Fillmore, "The Case for Case."

Figure 9



However, even though the diagram is clear enough, "John" is now Agentive with respect to the V, "CAUSE," which is itself relational, Indeed, it would be necessary to modify this system to account for, in this case, the A's being related to the V, "open"; and to note, as before, that smme V's are relational by label and some referential. At this point, it would seem that all efforts to label syntactic categories with semantic relations have failed.

Let us turn to the possibility of postulating a set of generative rules which contain distinct relational and referential semantic categories that are labeled at some point in the sentence derivation with syntactic category information. Clearly, this undertaking must be viewed as very tentative and preliminary. The fundamental categories could be the following:

EVENT:	THE PRIMITIVE PRODUCT OF LINGUISTIC OPERATION--THE COGNITIVE PERCEPTION OF TWO REFERENTS AS THEY ARE BROUGHT TOGETHER BY A PARTICULAR RELATION INTO A COGNITIVE SEMANTIC SET
REFERENT:	THE COGNITIVE, PERCEPTUAL UNIT WHICH HAS SOME ISOMORPHIC CONNECTION TO AN OBJECT, ACTION, STATE OR EVENT IN THE WORLD AS PERCEIVED BY THE MIND OF THE SPEAKER-HEARER
RELATION:	THE COGNITIVE, PERCEPTUAL UNIT WITH WHICH THE MIND ORGANIZES VARIOUS REFERENTS INTO COGNITIVE SEMANTIC SETS: EVENTS

First, every RELATION requires two REFERENTial coordinates. Second, certain REFERENTs, for example, concrete objects, are nominal at the deepest syntactic level[9]; others, for example, actions, are verbal. Third, some RELATIONs are syntactically pro-verbs or prepositions while others are either affixes or unmarked incorporations. In each case the choice of transformation and/or lexical item determines the ultimate form of the semantic unit.

---

[9] Synchronically, concrete objects are always fundamentally nouns. However, through the process of derivation, nouns are converted into superficially functional verbs; conversely, fundamental verbs are converted into surface nouns.

The second step in the evolution and evaluation of our system is the formulation of the semantic phrase structure rules which operate with the semantic categories. These may be given in the following form:

$$\text{EVENT} \longrightarrow \text{REFERENT} \quad \text{RELATION} \quad \text{REFERENT}$$

$$\text{REFERENT} \longrightarrow \left\{\begin{array}{l}\text{OBJECT}\\ \text{ACTION}\\ \text{EVENT}\end{array}\right\}$$ [10]

$$\text{RELATION} \longrightarrow \left\{\begin{array}{l}\text{CASE}\\ \text{CAUSE}\\ \text{PURPOSE}\\ \quad\ldots\end{array}\right\}$$ [11]

In those situations where the above categories are realized lexically; OBJECTs would be syntactically labeled N; ACTIONs, V; EVENTs, S; CASEs, PREP or V[12]; CAUSE, V; PURPOSE, V[13]

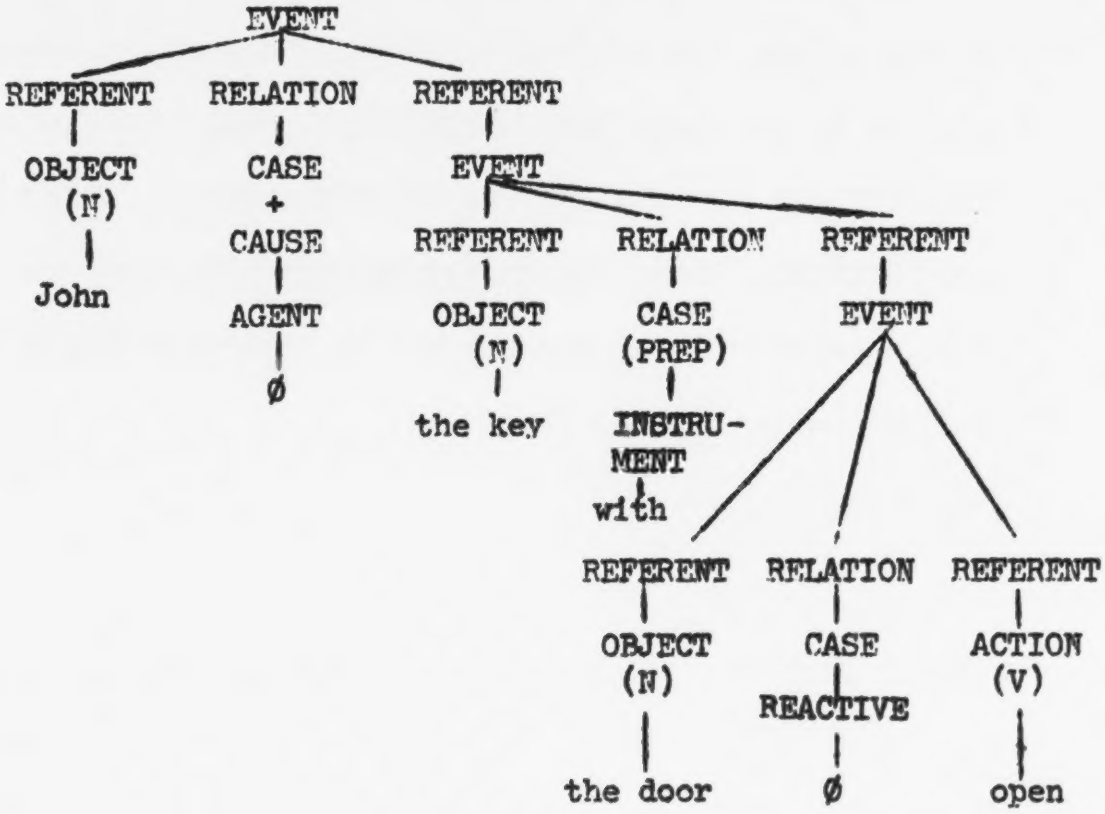
---

[10] It must be acknowledged that the terms OBJECT and ACTION are not immediately susceptible to a definition other than through a list of examples such as is found in Silvio Ceccato, *Linguistic Analysis and Programming for Mechanical Translation*, pp. 86-104. While this is clearly a serious problem, the requisite reliance on intuition at this point does not, I feel, make the system unvaluable.

[11] The term CASE is used here to stand for the somewhat lengthy list of case relations developed in Chapter II. Further, the term PURPOSE was introduced to illustrate the possibility of additional, but as yet undiscovered, RELATIONs. Whether PURPOSE is indeed another kind of RELATION or simply one more case RELATION is not now particularly relevant.

Now we can generate the following kind of a diagram:

Figure 10


EVENT
REFERENT
RELATION
REFERENT
OBJECT
(N)
John
CASE
+
CAUSE
AGENT
Ø
EVENT
REFERENT
RELATION
REFERENT
OBJECT
(N)
the key
CASE
(PREP)
INSTRU-
MENT
with
EVENT
REFERENT
RELATION
REFERENT
OBJECT
(N)
the door
CASE
REACTIVE
Ø
ACTION
(V)
open

---

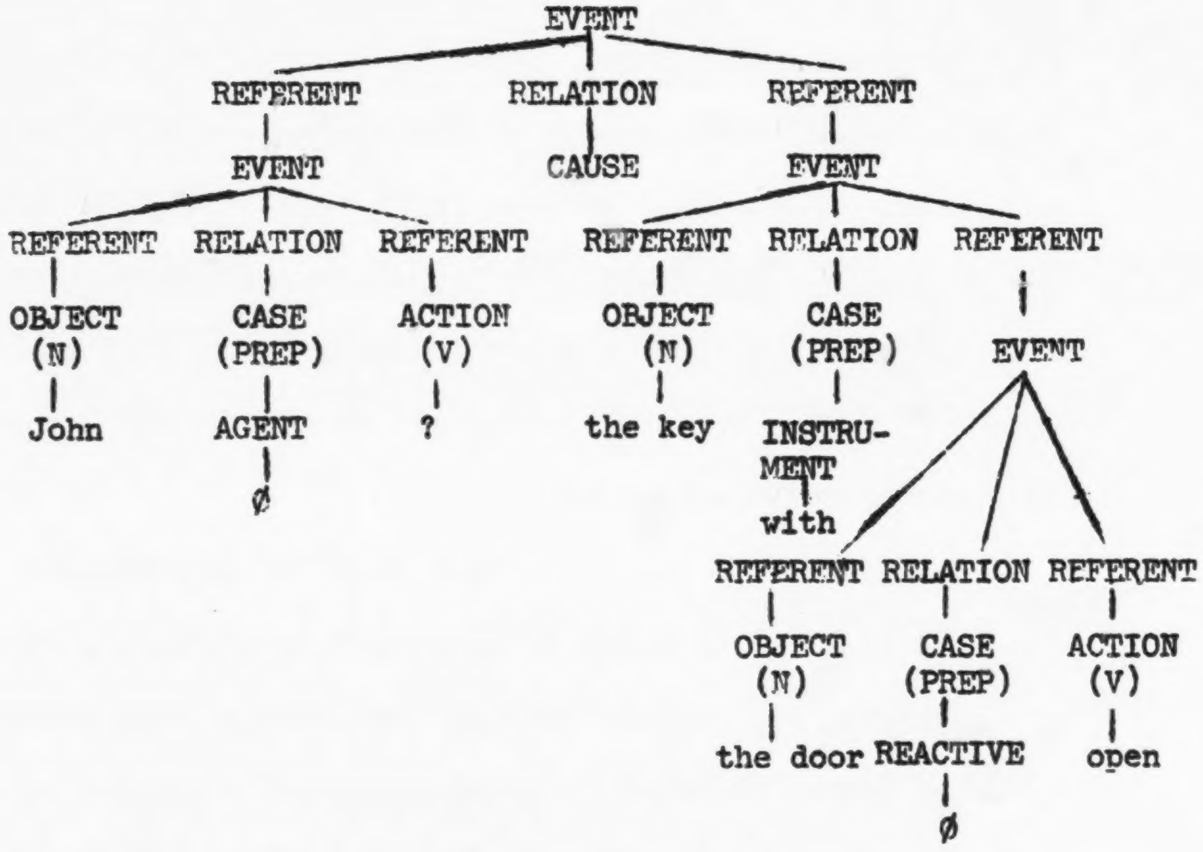
[12] While PREP(osition) is not a fundamental syntactic category--following Lakoff--but rather is a subcategory of V, it is stated in the above fashion for clarity.

[13] PURPOSE is a V in the case of intend, but a preposition+noun+preposition in the case of for the purpose of.

One positive feature about the above diagram is that it does separate the semantic functions of RELATION and REFERENT; and, with one exception, each RELATION is simple, rather than complex. The semantic form as we have thus far conceived it is maintained in that "the opening of the door" is dependent upon its instrumentation, which, as an entire unit, is dependent upon its cause or AGENT. The problem created by the complex RELATION of CASE+CAUSE may be solved by allowing the system to construct its own solution and by subsequently examining that solution for semantic validity.

In order to make the topmost RELATION simple, as required by the system, the rewrite rules would need to be further applied to the upper left REFERENT, leaving CAUSE as the primary RELATION and making AGENT the RELATION between "John" and some new REFERENT. Thus, the system hypothesizes that the semantic structure of our sentence may not be that represented in Figure 10, but rather that in Figure 11.

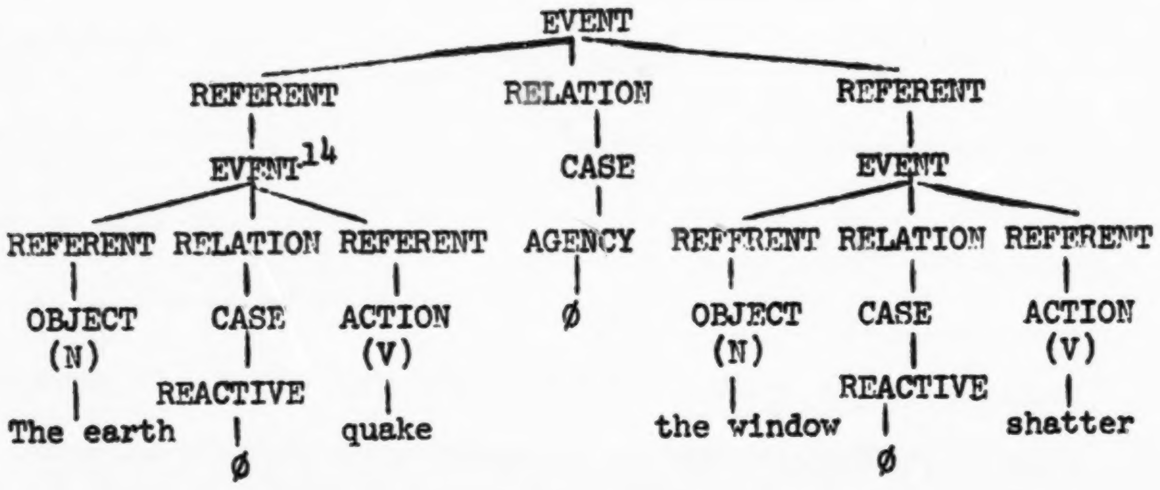
Figure 11


EVENT
REFERENT
RELATION
REFERENT
EVENT
CAUSE
EVENT
REFERENT
RELATION
REFERENT
REFERENT
RELATION
REFERENT
OBJECT (N)
CASE (PREP)
ACTION (V)
OBJECT (N)
CASE (PREP)
EVENT
John
AGENT
?
the key
INSTRUMENT
Ø
with
REFERENT
RELATION
REFERENT
OBJECT (N)
CASE (PREP)
ACTION (V)
the door
REACTIVE
open
Ø

The implications of this new configuration are twofold. First, the system is claiming that EVENTs can be causally related to other EVENTs. We might say, as a paraphrase of this claim, that it is precisely the exertion of force or power referred to by EVENT that can be causal; that simple REFERENTs, for example, OBJECTs, are only potentially the source of force or power which must be referred to in order to be semantically acceptable as the first correlated element of the RELATION CAUSE: animate beings do not cause, they exert, specified or unspecified, force or power which causes. The opposing position requires the assumption that AGENT and CAUSE are synonymous, or at least that CAUSE subsumes AGENT and therefore is redundant. Second, the system is claiming that some unspecified REFERENT, namely ACTION, exists to which "John" is related AGENTively. Perhaps it is some PRO-ACTION such as use or MOTION. Use would seem to require the presence of INSTRUMENT, a requirement which is satisfied in this case; while MOTION is sufficiently unconstrained to account for a number of non-INSTRUMENT sentences.

Let us turn to the claim that CAUSE is superfluous. What evidence might we discover to support this hypothesis besides the negative, and perhaps trivial, observation that the ACTION of which "John" is AGENT is indeterminable? Only two relational categories can be semantically prior to CAUSE: AGENT and AGENCY, where the former correlates an animate being--one type of OBJECT in our present terminology--and the latter an EVENT. If these two case relations exhaust the types of categories required by CAUSE and if it can be demonstrated that no semantic unit (EVENT) requires the appearance of both CAUSE, and AGENT or AGENCY, the element CAUSE can be eliminated without the loss of information and with the gain of precision and simplification. Some sentence involving AGENCY could well be a decisive test; for we have already demonstrated that Figure 10, with the slight modification involving the removal of CAUSE, produces an appropriate result. Let us, then, examine the diagram for sentence (7) (The earthquake shattered the window) in Figure 12.

Figure 12


EVENT
REFERENT
RELATION
REFERENT
EVENT[14]
CASE
EVENT
REFERENT
RELATION
REFERENT
AGENCY
REFERENT
RELATION
REFERENT
OBJECT (N)
CASE
ACTION (V)
Ø
OBJECT (N)
CASE
ACTION (V)
REACTIVE
REACTIVE
The earth
Ø
quake
the window
Ø
shatter

If this analysis is correct, how is it that sentences like (8)

(8) Harry hit the wall

cannot form paraphrases containing the verb cause, while sentences like (7) can? A claim that cause is a pro-verb which must appear with a sentential object would not account for sentences like (9)

(9) The wind caused the flood

---

[14] Notice that we have left out the semantically essential information prior to "the earth's reactively quaking" since it is not a part of the stated meaning of the sentence in question (it is presupposed) and since the point of discussion does not require it.

in which the object is not superficially sentential. In any case, perhaps the solution is not a matter of semantics, but rather one of co-occurrents, parallel to other pro-verbs.[15]

A sentence like (10) may test our hypothesis that no EVENT

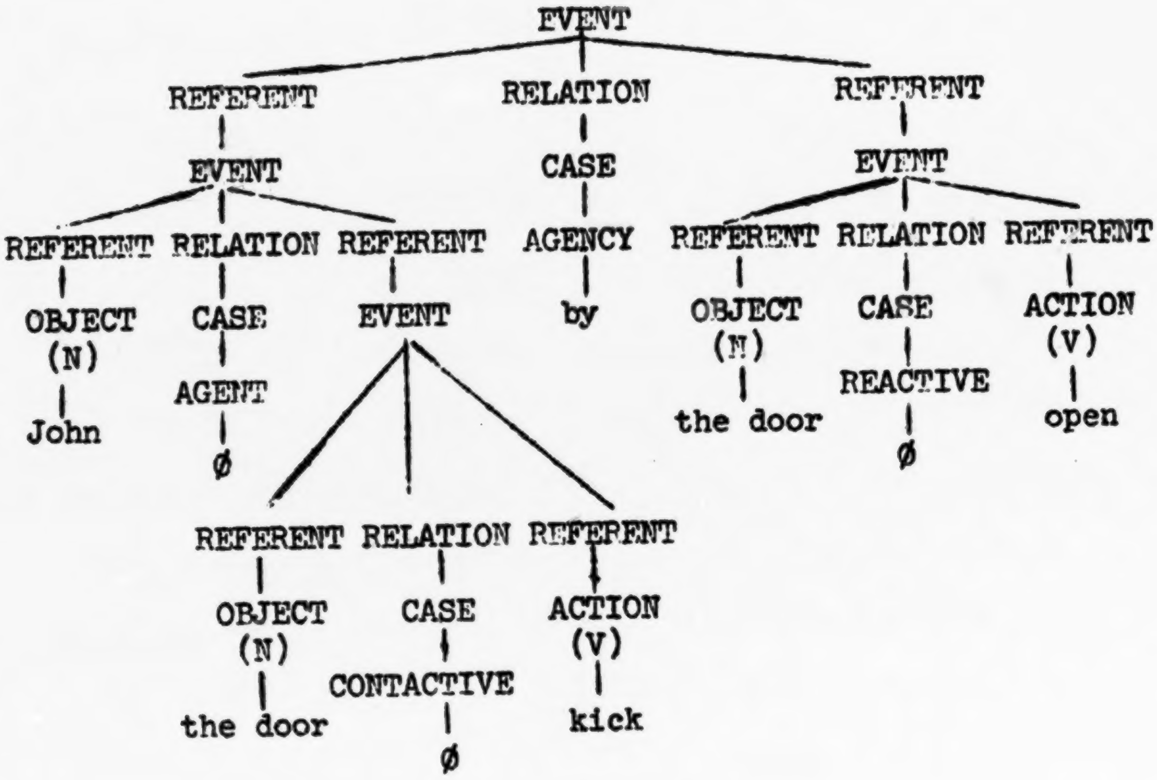
(10) John opened the door by kicking it

requires the appearance of both CAUSE and AGENT. In this sentence "John" would seem to be AGENT of "kicking"; as such, the sentence presents the problem of determining the semantic "subject" of "open." The first solution provided by the system is represented in Figure 13.

---

[15] It might be that cause is the superficial signal of AGENT or AGENCY in those cases where REACTIVE or RESPONSIVE is present.

Figure 13

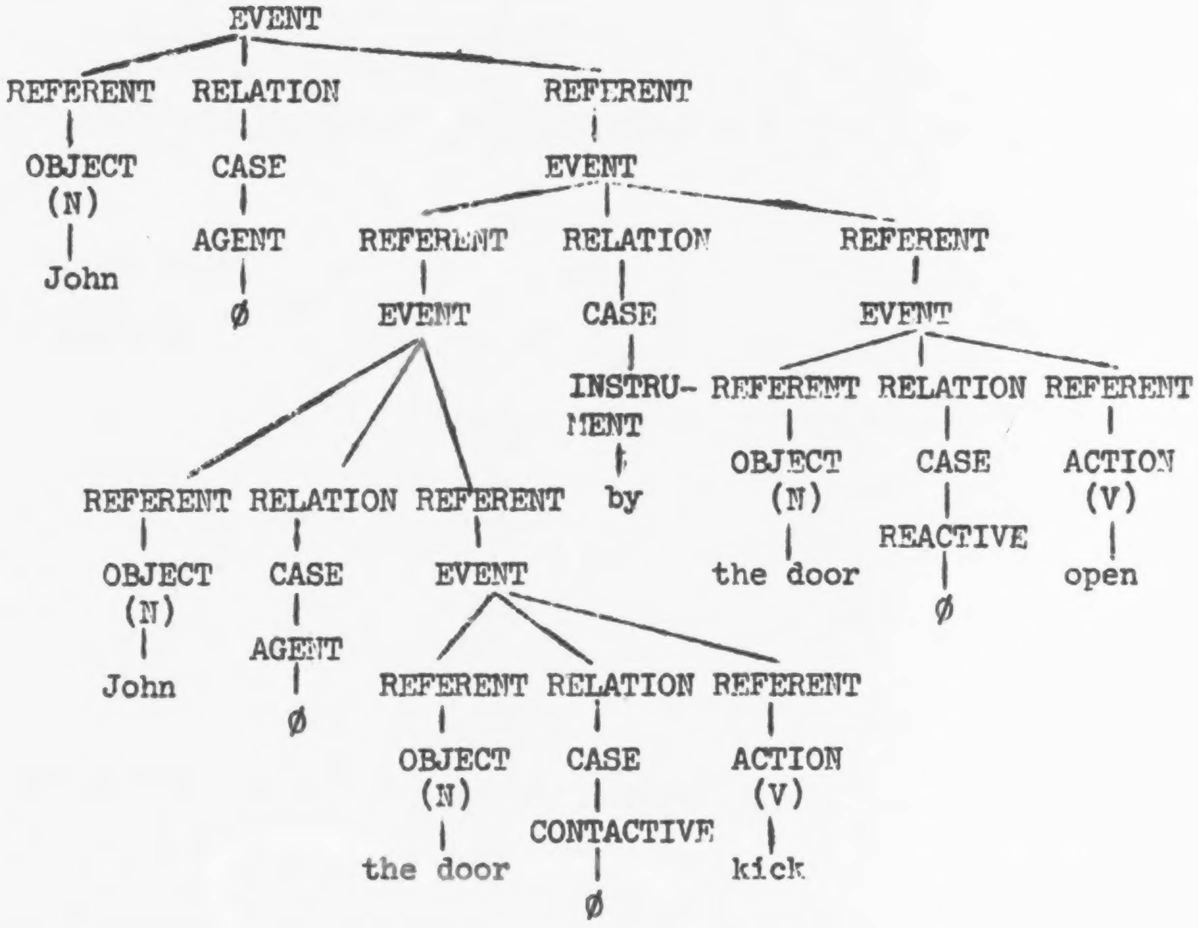

EVENT
REFERENT
RELATION
REFERENT
EVENT
CASE
EVENT
REFERENT
RELATION
REFERENT
AGENCY
REFERENT
RELATION
REFERENT
OBJECT (N)
CASE
EVENT
by
OBJECT (N)
CASE
ACTION (V)
John
AGENT
0
the door
REACTIVE
0
open
REFERENT
RELATION
REFERENT
OBJECT (N)
CASE
ACTION (V)
the door
CONTACTIVE
0
kick

Here "John" is represented as the AGENT of the EVENT, "the door's being kicked." This EVENT, including "John," is now shown as the AGENCY of the EVENT, "the door's opening," and is signaled by the preposition "by." However, the preposition "by" is a reduced form of "by means of," and not the AGENT/AGENCY signal, as is shown by (11), the paraphrase of (10):

(11) John opened the door by means of a kick

This suggests that "John's kicking the door" is an eventive INSTRUMENT, not an AGENCY as represented in Figure 13. Therefore, we have arrived at the second solution provided by the system. This solution is shown in Figure 14.

Figure 14


EVENT
REFERENT
RELATION
REFERENT
OBJECT (N)
CASE
EVENT
John
AGENT
Ø
REFERENT
RELATION
REFERENT
EVENT
CASE
EVENT
INSTRUMENT
by
REFERENT
RELATION
REFERENT
OBJECT (N)
CASE
ACTION (V)
the door
REACTIVE
Ø
open
REFERENT
RELATION
REFERENT
OBJECT (N)
CASE
EVENT
John
AGENT
Ø
REFERENT
RELATION
REFERENT
OBJECT (N)
CASE
ACTION (V)
the door
CONTACTIVE
Ø
kick

This figure represents "John" as the AGENT of the EVENT which includes "the INSTRUMENT's opening the door." Moreover, that INSTRUMENTal REFERENT is itself an EVENT, which includes "John" again as AGENT, though in this case as AGENT of "kicking the door." Since this solution seems adequate, the RELATIONs AGENT and AGENCY have the same function as CAUSE, and CAUSE can, then, be removed from our list of fundamental RELATIONs.[16]

Returning to Figure 13, we find that the upper left REFERENT could produce the sentence

(12) John kicked the door

while the upper right REFERENT could produce the sentence

(13) The door opened

If these two REFERENTs are connected in an AGENCY RELATION, there might be some sentence containing them both in which cause appears. (14) is an example:

(14) The door opened because John kicked it

This sentence differs in meaning from (10), in which "John" was in control of the process of opening. In (14), on the other hand, "John" may or may not have had control over the opening.

In a sentence like

(15) John kicked the door open

it would appear that we have a variant of either (14) or (13).

---

[16] It may be that the only type of RELATION is case, in which case the third semantic phrase structure rule could be simplified in the following way:

$$\text{RELATION} \longrightarrow \left\{ \begin{array}{l} \text{AGENT} \\ \text{AGENCY} \\ \text{INSTRUMENT} \\ \quad \ldots \end{array} \right\}$$

We will operate with this revised rule until such time as it can be demonstrated to be oversimplified.

If there is indeed an ambiguity---assuming no disambiguating context--it is accounted for by the pair of deep structures presented in Figure 13 and Figure 14.

Let us take the configuration of a simple sentence like (8) and see what we have gained or lost over earlier syntactically based systems.

Figure 15

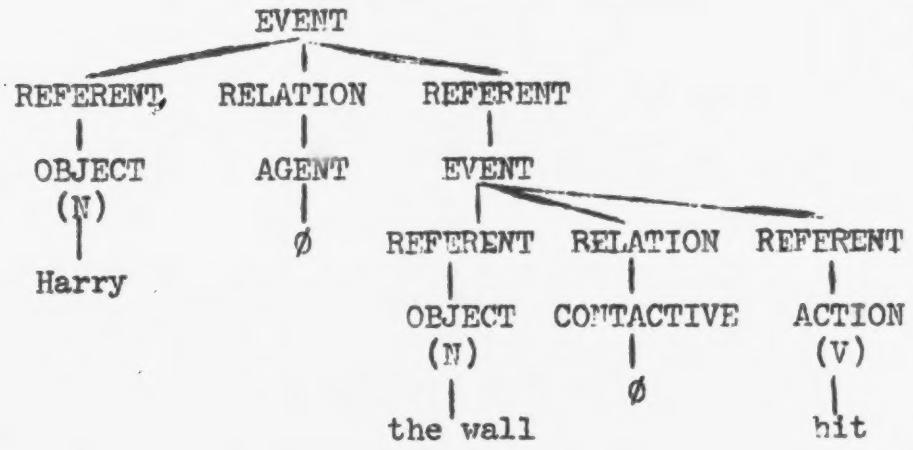

EVENT
REFERENT
RELATION
REFERENT
OBJECT
(N)
AGENT
EVENT
Harry
Ø
REFERENT
RELATION
REFERENT
OBJECT
(N)
CONTACTIVE
ACTION
(V)
Ø
the wall
hit

Figure 16

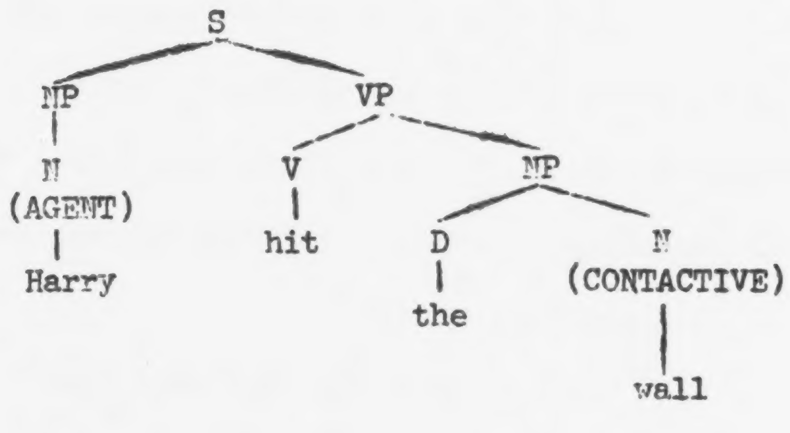

S
NP
VP
N
(AGENT)
V
NP
Harry
hit
D
N
(CONTACTIVE)
the
wall

Figure 17

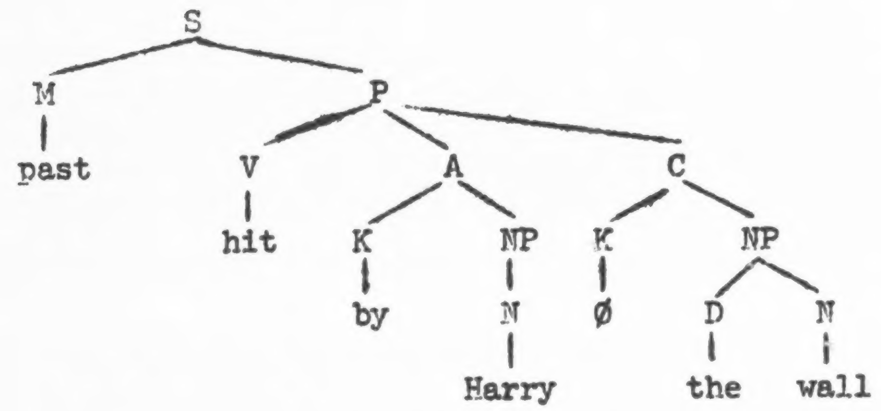


Figure 15 represents the application of our generative semantic rules; Figure 16, of generative syntactic rules with semantic category insertion· and Figure 17, of Fillmore's generative case grammar rules.[17] As we said earlier, we can see that

Figure 17 fails to capture the semantic structure of (8) and fails to separate the semantic functions of reference and relation from syntactic categorizing; likewise Figure 16, while representing in this case the appropriate semantic order, fails to separate semantic functions and to present semantic facts instead of syntactic facts as fundamental. Figure 15 presents both the semantic "subject" and "predicate" in the left and right REFERENTs, respectively.[18]

---

[17] Fillmore does not have C(ontactive); in his system "the wall" would be Place. However, his grammar is not misrepresented in any way relevant to the questions now under discussion.

---

[18] As indicated earlier, we shall not take up the problem of transformationally derived structure. We could speculate, however, that constituent ordering might be viewed as a process containing rules which "read" deep structures as they move in mobile fashion and fix positions as they occur.

The only "inconvenience" of relying upon these generative semantic rules is that created by the distance between semantic structures and English word order and form. For example, we have seen that sentences are not always, if ever, readily "read off" from hypothesized deep structures. This fact should be neither surprising nor disappointing. If our criterion for the success of a system of generative rules is that they produce English sentences directly, then we had better forego any hopes of capturing revealing generalizations about meaning. Such attempts have always produced less than satisfying results. Perhaps at some initial stage of linguistic inquiry, a connection between postulated semantic structures and sentences might be maintained for ease of comprehension; but greater insight should be the reward for our efforts to overcome these idiosyncratic constraints. A more serious problem is not the psychological one of finding that our language does not mirror the order and form of meaning, but rather that of determining the order and configuration of that aspect of language. How is it that we can become skilled at performing semantic analysis? Are there procedures to follow in order to have not only a generative semantics but also an analytical semantics? The most complete extant fragments of a grammar have succeeded only in providing a mechanism for converting fundamental syntactic structures into sentences, indeed they have claimed no higher goal. Thus, if we fail to determine analytical techniques for semantic structures, we are only guilty of trying what others have eschewed in the belief they would fail.

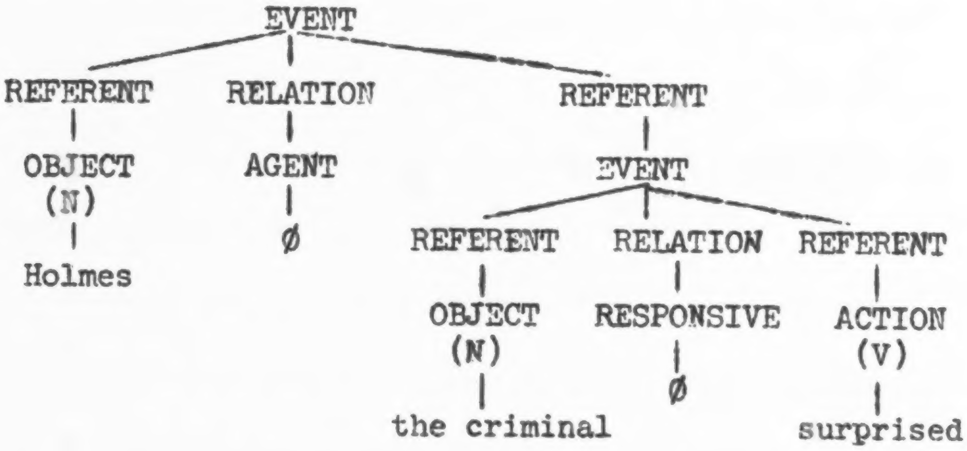
It is premature to undertake this task when we have yet to demonstrate that our system of generative semantics can provide semantic structures for more than an insignificant number of the sentences in our language. What we must now attend to is a substantial set of divergent sentence types in an effort to support our hypothesis of semantic structures. If the system can satisfactorily account for each of the types of sentences analyzed in the previous chapter, we can feel with reasonable certainty that it is at least tentatively sound. Because our choice of sentences in that chapter was based on an effort to compare widely differing semantic relations moreover, we ought to have added comfort from their extensiveness if not from their representativeness.

We have already examined sentences containing verbs like *shatter* and *strike* (sentence (4), Figure 10, sentence (8), Figure 15) and found them to be accounted for by the system under development. Let us examine a sentence containing *surprise* and its RESPONSIVE object.

(16) Holmes surprised the criminal

Here, as we indicated in the Case chapter, "Holmes" is AGENTive and "the criminal" is RESPONSIVE. Since no INSTRUMENT is indicated, though we might expect an eventive one to underlie the sentence, we shall construct a simple semantic diagram containing only the minimum elements.

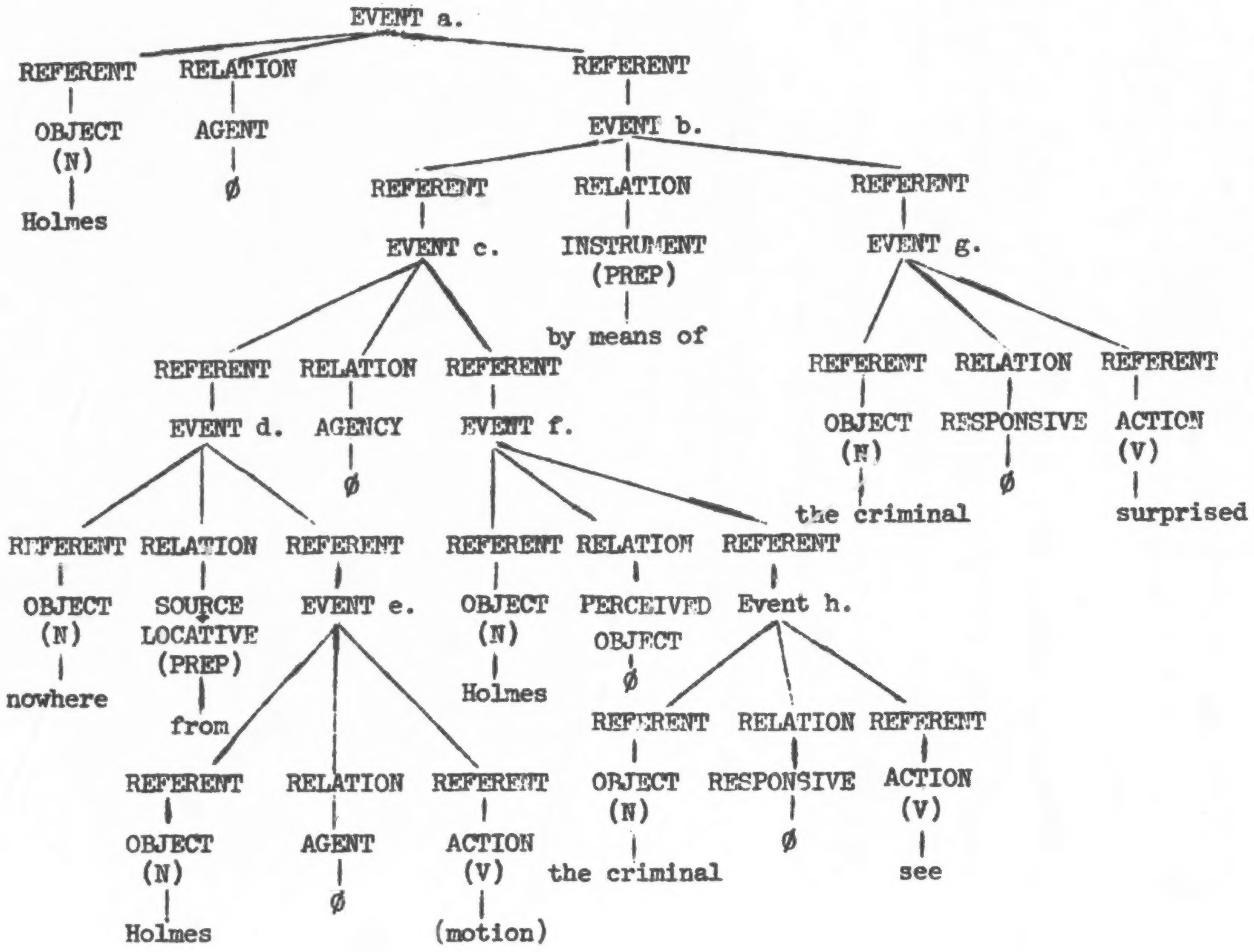
Figure 18


EVENT
REFERENT
RELATION
REFERENT
OBJECT (N)
AGENT
EVENT
Holmes
Ø
REFERENT
RELATION
REFERENT
OBJECT (N)
RESPONSIVE
ACTION (V)
the criminal
Ø
surprised

A more complete diagram for sentence (17) containing an eventive instrument is shown in Figure 19.

(17) Holmes surprised the criminal by appearing from nowhere

Figure 19


EVENT a.
REFERENT
OBJECT (N)
Holmes
RELATION
AGENT
Ø
REFERENT
EVENT b.
REFERENT
EVENT c.
RELATION
INSTRUMENT (PREP)
by means of
REFERENT
EVENT g.
REFERENT
EVENT d.
RELATION
AGENCY
Ø
REFERENT
EVENT f.
REFERENT
OBJECT (N)
the criminal
RELATION
RESPONSIVE
Ø
REFERENT
ACTION (V)
surprised
REFERENT
OBJECT (N)
nowhere
RELATION
SOURCE LOCATIVE (PREP)
from
REFERENT
EVENT e.
REFERENT
OBJECT (N)
Holmes
RELATION
AGENT
Ø
REFERENT
ACTION (V)
(motion)
REFERENT
OBJECT (N)
Holmes
RELATION
PERCEIVED OBJECT
Ø
REFERENT
Event h.
REFERENT
OBJECT (N)
the criminal
RELATION
RESPONSIVE
Ø
REFERENT
ACTION (V)
see

To facilitate our discussion and "reading" of Figure 19 we should examine sentence (17) to determine a full paraphrase. First, we know that "Holmes" bears the relationship AGENT to "the surprising of the criminal." Additionally we know that "Holmes" is the AGENT of "his appearance." The meaning of the verb appear is something like: "do something which results in someone's seeing the doer." We do not simply "appear," we "appear to someone." The preposition by as we saw in our examination of sentence (10) is a reduced form of the instrumental phrase by means of rather than a signal of AGENT in a passive construction. A full paraphrase might be:

> Holmes caused the criminal to be surprised by means of his coming from nowhere thereby causing the criminal to see him.

If this is an accurate paraphrase, we can "read" the diagram in order to determine its adequacy.

As we have indicated, "Holmes" is the AGENT of the entire unit or cognitive linguistic event and, therefore, is appropriately located as the left REFERENT of EVENT a.[19] and is correlated with AGENT to the rest of the diagram which stems from the right REFERENT of EVENT a. In other words "Holmes" is the initiator of the entire chain of EVENTs.

---

[19] Each EVENT in the diagram has been given a letter to make the task of referring to each one more manageable.

The left REFERENT of EVENT b. is instrumental in producing the end result as related in EVENT g.: "the criminal's surprise." EVENT c., the INSTRUMENTal EVENT, is composed of two EVENTs---d. and f.--in accordance with our understanding of the meaning of "appeared from nowhere." The left REFERENT of EVENT c. contains EVENT d. which is the AGENCY or cause of "the criminal's seeing Holmes." This AGENCY consists of the semantic content: "Holmes' coming from nowhere."[20] The REFERENT OBJECT "nowhere" is located at the left since the REFERENT which is SOURCE "exists" prior to "what comes from it,". in this case"Holmes' being AGENTively in motion." We need the two occurrences of "Holmes" as AGENT since there are sentences in which the OBJECT in motion, for example TRANSMITTIVE, within the same structure could be made to appear by some other AGENT, that is, the one in EVENT a. For example, sentence (18) illustrates precisely this fact:

(18) Holmes surprised the criminal by making his mother-in-law appear from nowhere

---

[20] We have left the element "nowhere" unanalyzed, treating it as a REFERENT of location, for a number of reasons, not the least of which is the difficulty of the negative and the literal paradox of the meaning. However, this procedure will not hamper the discussion of the relevant points of the sentence and its diagrammatic meaning.

The fact that, in EVENT f., "the criminal" is RESPONSIVEly related to the act of seeing indicates that seeing is not AGENTively directed as, for example, looking is, but is rather an activity accomplished in response to certain external (and internal) conditions, namely the presence of some perceptible object. EVENT f. introduces a relationship not formerly discussed. We have tentatively labeled this relationship PERCEIVED OBJECT. Perhaps the term PERCEPTIVE would better serve this function. What is noteworthy is that, in EVENT f., "the criminal" is in the left REFERENT position indicating its prior semantic "existence" to the act of perception. Furthermore, the left REFERENT position of "Holmes" in EVENT f. also indicates its prior semantic "existence."

If we wish to further provide a "reading" for Figure 19, we could say the following:

i. "Holmes" is the AGENT with respect to EVENT b.

ii. EVENT c. is the INSTRUMENT with respect to "the criminal's surprise."

iii. "Nowhere" is the LOCATIVE SOURCE with respect to "Holmes' coming (motion)."

iv. "Holmes" is the AGENT with respect to "(his) coming (motion)."

v. EVENT d.--"Holmes' coming from nowhere"--is the AGENCY with respect to "the criminal's seeing him."

vi. "The criminal" is RESPONSIVE with respect to "(his) seeing."

vii. "The criminal" is RESPONSIVE with respect to "(his) surprise."

viii. "Holmes" is PERCEPTIVE with respect to "the criminal's seeing."

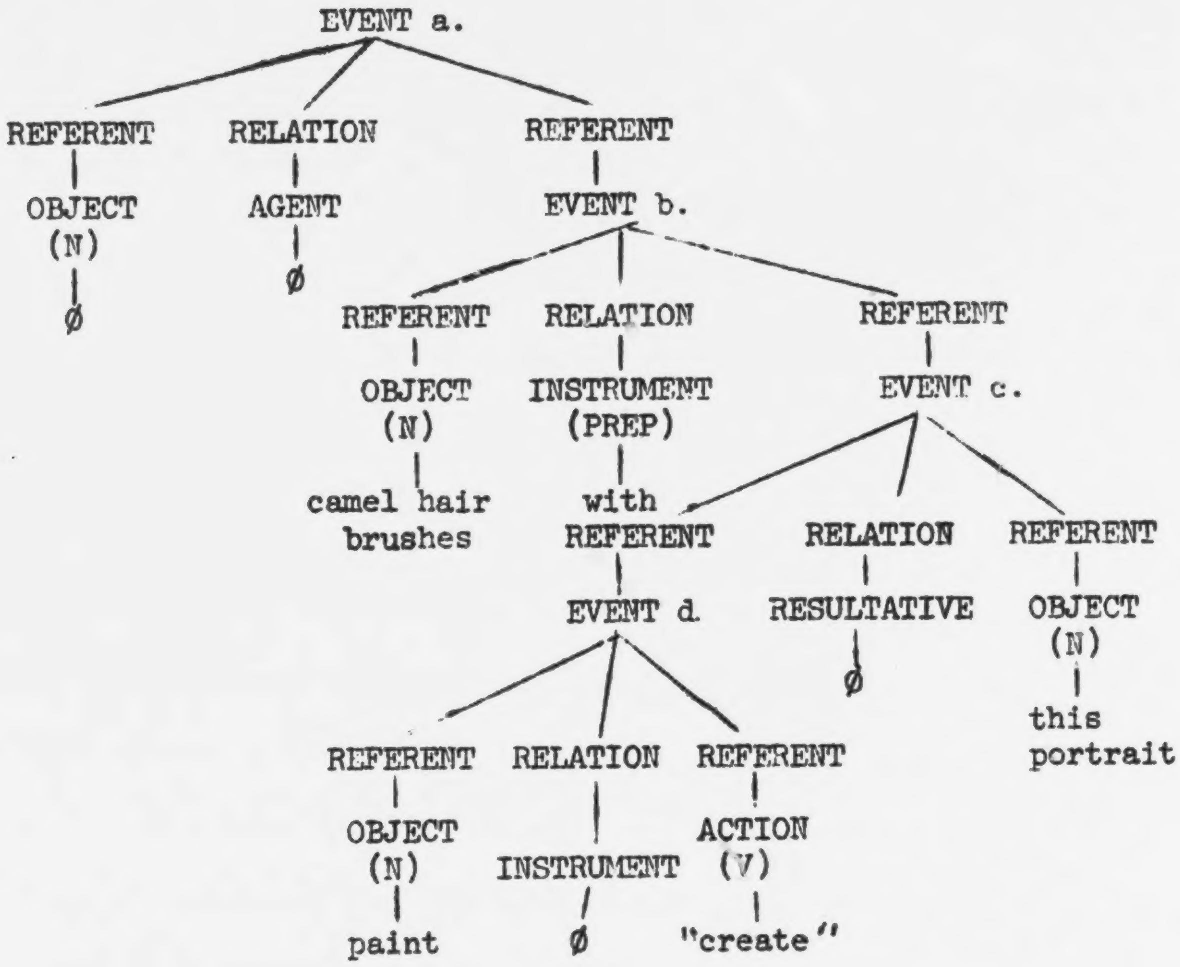
This series of statements, i.-viii., simply states in English what Figure 19 has stated with diagrammatic precision and semantic consistency. It has, however, given us additional opportunity for understanding how to "read" such diagrams.

Let us now take a sentence containing a "creative" verb:

(19) This portrait was painted with camel hair brushes

Several interesting facts should be noted about this sentence. First, it is a passive sentence with the AGENT REFERENT deleted. Second, the verb paint, as we formerly indicated, is derived from the fundamental meaning: "create X with paint." Third, the unit "camel hair brushes" is complex: a) "camel hair" is derived from "hair from a camel," b) "brushes" is derived from "someone uses X to brush...." Thus, "brush" is fundamentally a verb converted into an instrumental nominal. For our present purposes, we shall not delve into this complex, but treat "camel hair brushes" as a unit.

Figure 20


EVENT a.
REFERENT
OBJECT (N)
Ø
RELATION
AGENT
Ø
REFERENT
EVENT b.
REFERENT
OBJECT (N)
camel hair brushes
RELATION
INSTRUMENT (PREP)
with
REFERENT
EVENT c.
REFERENT
EVENT d.
REFERENT
OBJECT (N)
paint
RELATION
INSTRUMENT
Ø
REFERENT
ACTION (V)
"create"
RELATION
RESULTATIVE
Ø
REFERENT
OBJECT (N)
this portrait

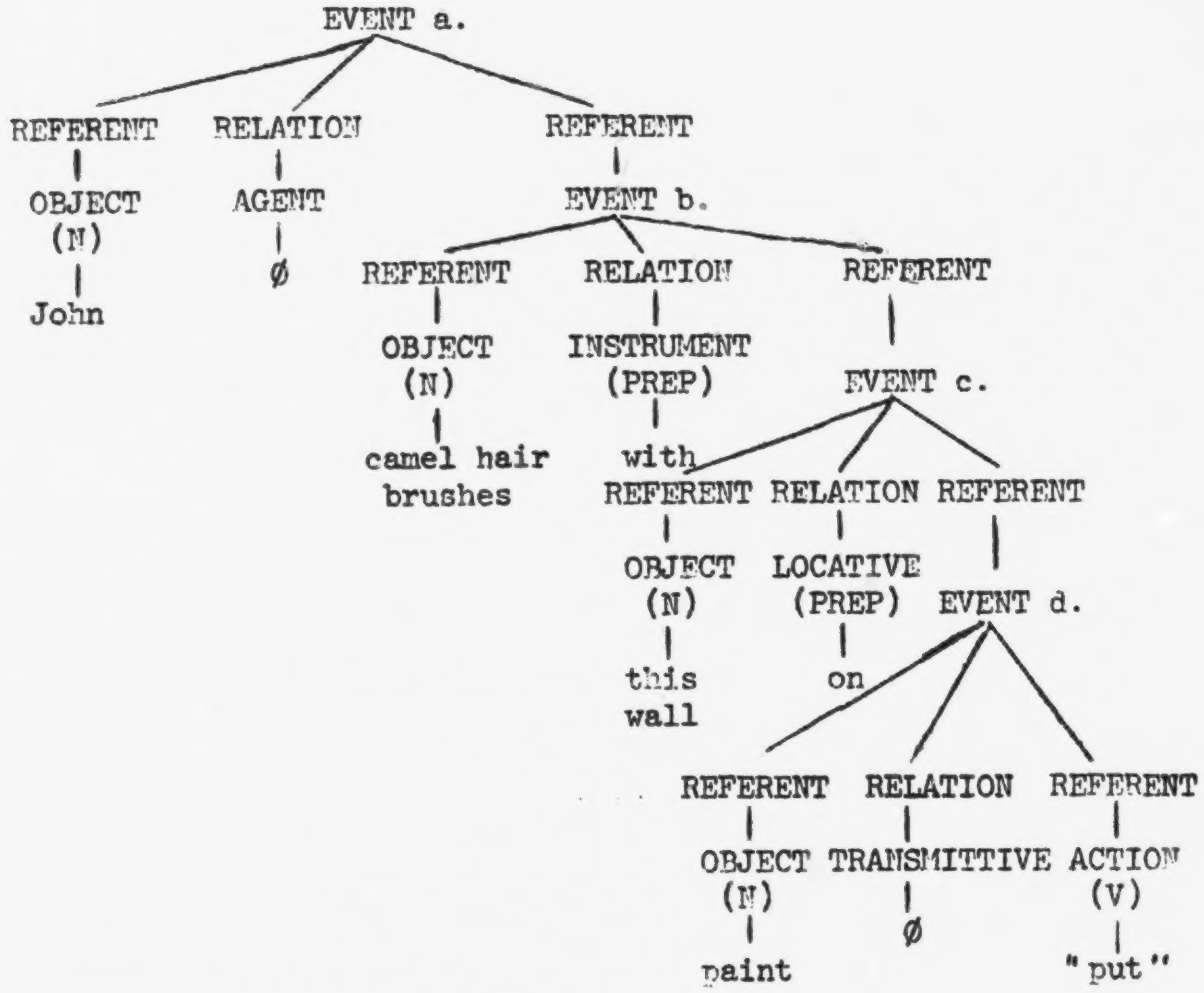
The most important aspect of this diagram is in EVENT d., for this particular part of the structure illustrates an earlier claim about the structure of individual words. At the level of derivation where "paint" becomes ACTION, EVENT d. is transformed into the category V, incorporating the idea of the REFERENT, "paint," the RELATION, INSTRUMENT, and the ACTION, "create." This is a very exciting discovery especially if the process of converting EVENTs into complex verbs, nouns, and even compounds is found to be a general one. This, then, is the first major "discovery" made by the system itself.

EVENT a. reveals that the left REFERENT, indicating the AGENTively related category, is empty in agreement with the lack of surface element in the passive sentence. EVENT b. shows the left REFERENT, "camel hair brushes" in an INSTRUMENTal relationship to the REFERENT containing EVENT c. In the latter EVENT the REFERENT, "this portrait," is in a RESULTATIVE relationship to the EVENT, "creating with paint," where the REFERENT "paint" is INSTRUMENTally related to the ACTION, "create."

Let us quickly turn to a sentence containing the verb paint, in the sense previously noted--"put paint on X"--in order to compare the way our system distinguishes these two semantic constructs.

(20) John painted this wall with camel hair brushes

Figure 21


EVENT a.
REFERENT
OBJECT (N)
John
RELATION
AGENT
Ø
REFERENT
EVENT b.
REFERENT
OBJECT (N)
camel hair brushes
RELATION
INSTRUMENT (PREP)
with
REFERENT
EVENT c.
REFERENT
OBJECT (N)
this wall
RELATION
LOCATIVE (PREP)
on
REFERENT
EVENT d.
REFERENT
OBJECT (N)
paint
RELATION
TRANSMITTIVE
Ø
REFERENT
ACTION (V)
" put "

Again the configuration is like that of Figure 20, but with two important differences: the REFERENT "wall" is related LOCATIVEly where the REFERENT "this portrait" was related RESULTATIVEly; the REFERENT "paint" is related TRANSMITTIVEly where it was related INSTRUMENTally in Figure 20. These differences correspond exactly to the differences in meaning which we stated earlier.[21]

Another interesting fact is that EVENT d. in Figure 21 has precisely the same connection to the surface (derived) verb _paint_ as EVENT d. in Figure 20 has to its derived verb _paint_. This is additional evidence that the process just mentioned is indeed a general one though it is too soon to know how widely it applies.

What would the appearance be of diagrams representing the semantic process of removing objects from existence? Sentence (21) illustrates this type:

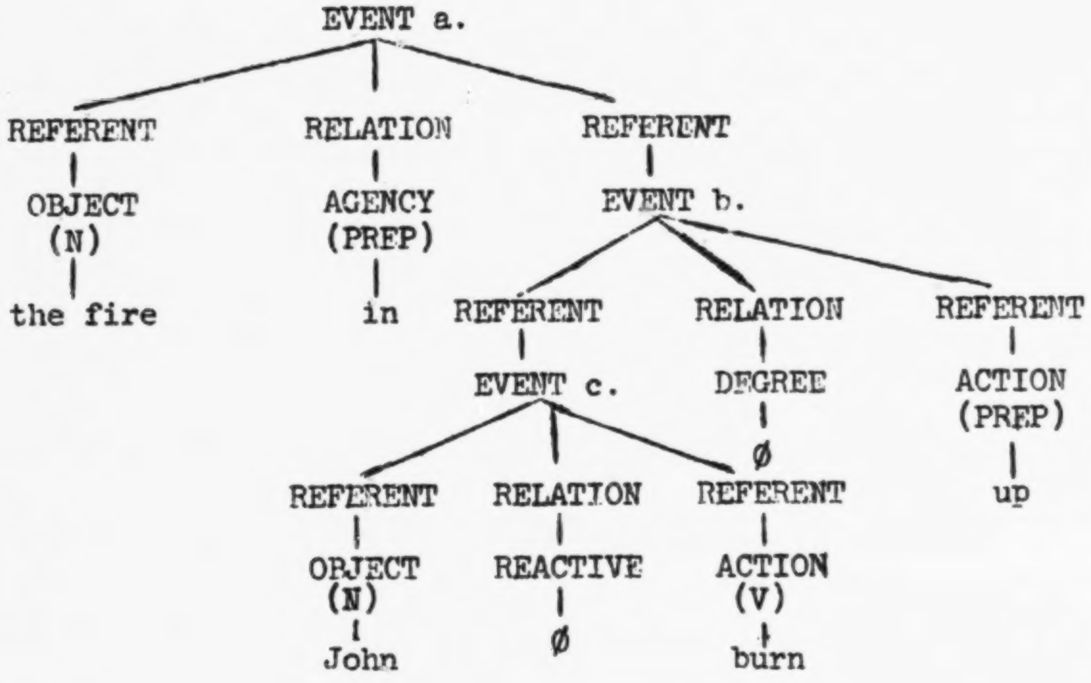
(21) John burned up in the fire[22]

---

[21] In the formation of EVENT c. the placement of the REFERENT "this wall" in the left position may be justified by the fact that the wall "exists" prior to "the putting of the paint." However, it could be argued that the act of "putting" is prior to the paint's being on the wall. This argument does not change the order since EVENT c. does not include the stative meaning "the paint is on this wall." On the other hand, the similarities between "this wall" and RECEPTIVE OBJECTs suggest that the RELATION of EVENT c. may be complexly LOCATIVE + RECEPTIVE. If this is the case, the positions of the two REFERENTs in EVENT would have to be reversed since the object-in-motion, "the paint," is prior to an object-as-receiver.

[22] _Burn up_ is a complex semantic unit. (21) does not have the same meaning as "John burned in the fire," which does not necessarily require that John's body was removed from existence. Thus, the representation of (21) will contain the meaning of _burn_ and the meaning of _up_ as separate semantic units, unlike the representation of some other sentence which contains a simple verb of destruction.

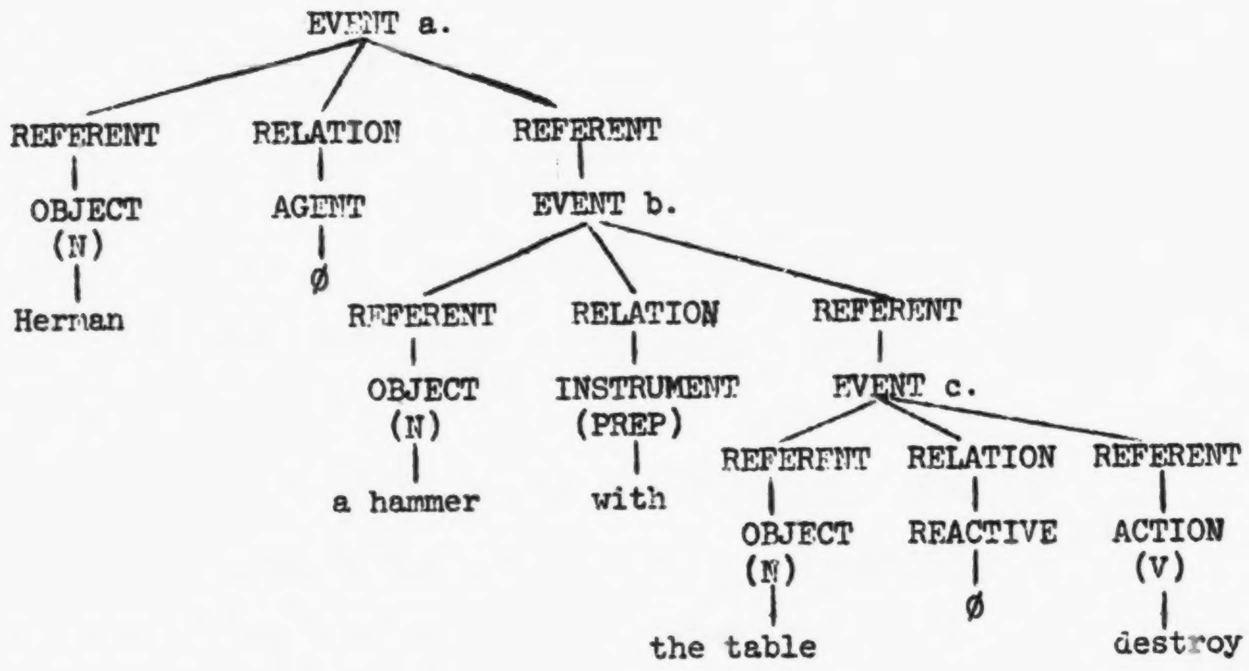
Figure 22


EVENT a.
REFERENT
RELATION
REFERENT
OBJECT
(N)
the fire
AGENCY
(PREP)
in
EVENT b.
REFERENT
RELATION
REFERENT
EVENT c.
DEGREE
Ø
ACTION
(PREP)
up
REFERENT
RELATION
REFERENT
OBJECT
(N)
John
REACTIVE
Ø
ACTION
(V)
burn

Before we begin to discuss Figure 22, let us provide another example for comparison.

(22) Herman destroyed the table with a hammer

Figure 23


EVENT a.
REFERENT
OBJECT (N)
Herman
RELATION
AGENT
Ø
REFERENT
EVENT b.
REFERENT
OBJECT (N)
a hammer
RELATION
INSTRUMENT (PREP)
with
REFERENT
EVENT c.
REFERENT
OBJECT (N)
the table
RELATION
REACTIVE
Ø
REFERENT
ACTION (V)
destroy

In sentence (22) we know that "Herman" is AGENTively related to EVENT b., that "a hammer" is INSTRUMENTally related to EVENT c., "the destruction of the table"; and that "the table" is REACTIVEly related to the ACTION of "destruction." Thus Figure 23 is essentially the same as Figure 10, except for the difference in meaning between destroy and open.

EVENT c. in Figure 23 is not like EVENT c. in Figure 22 because of the difference in the meaning of burn and destroy as formerly noted (cf. footnote 22). EVENT b. of Figure 22 is similar in total meaning to EVENT c. of Figure 23, differences between the more general term destroy and the more specific burn up aside. In showing "the fire" as the left

REFERENT of EVENT a. (Figure 22), we have assumed rightly that "the fire" is prior to "John's burning up." What of the decision to designate the RELATION as AGENCY? The preposition "in" would seem initially to indicate that the RELATION was LOCATIVE, not AGENCY. First we have assumed that there is no unspecified AGENT underlying (21). If there were such an AGENT, "the fire" would be treated as INSTRUMENT. The following paraphrase illustrates this possibility: "someone burned John up in the fire." But how would we be certain, even in this case, that "the fire" was not LOCATIVE? If "the fire" were not INSTRUMENT, we could add an INSTRUMENT to the sentence. If "the fire" is INSTRUMENT, we could not add another INSTRUMENT since unconjoined occurrences of more than one INSTRUMENT are prohibited. Therefore, by inference, the unacceptability of (23) indicates that "the fire" is INSTRUMENTal.

(23) *Someone burned John up in the fire with gasoline

What of the possibility that some AGENCY other than "the fire" underlies (21)? We cannot imagine a sentence in which "the fire" is purely LOCATIVE and something else is AGENCY. For example, note the oddness of (24) and (25).

(24) *Lightning burned John up in the fire

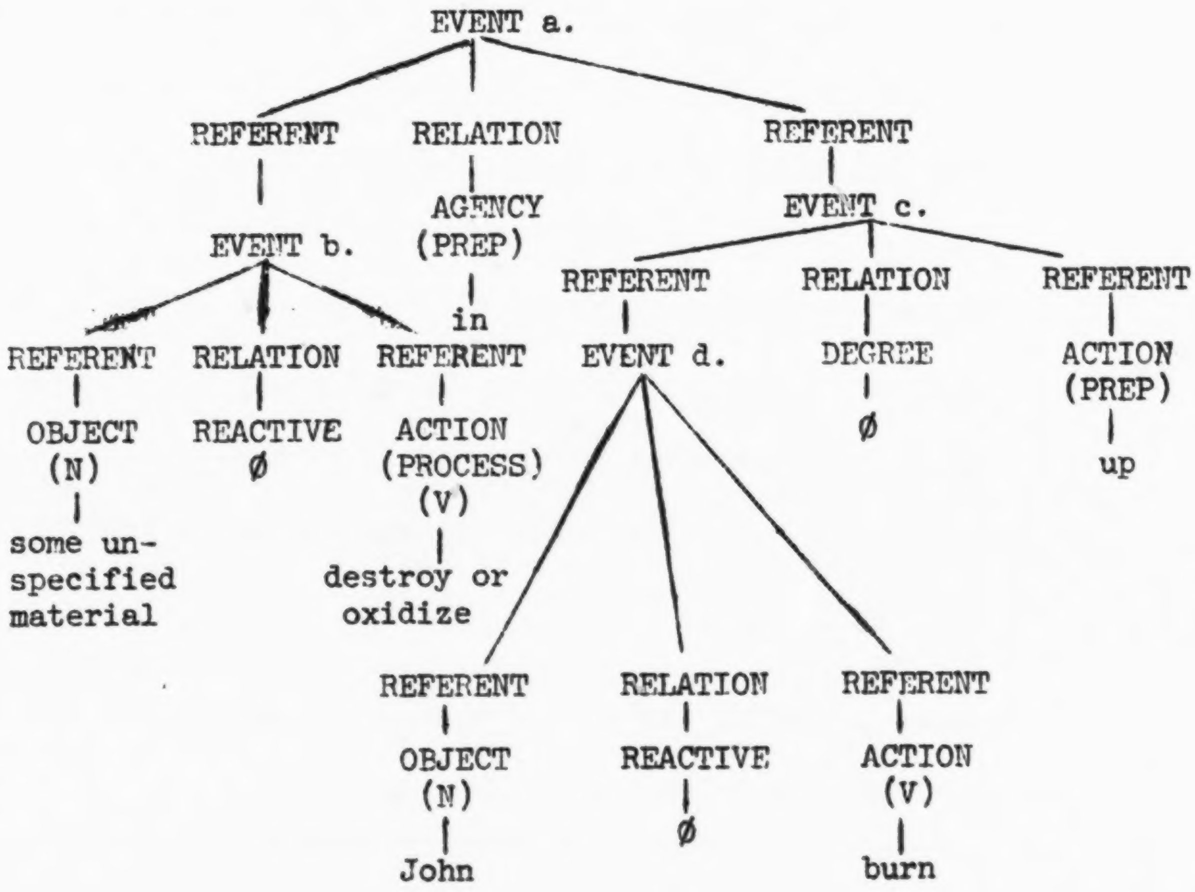
(25) *The storm burned John up in the fire

By process of elimination, then, we are left with "the fire" as AGENCY. However, in II, we indicated that a unit which was acceptable as the first element correlated by AGENCY had to be an EVENT. This means our diagram is inaccurate since we have represented "the fire" as an OBJECT. If we think about fire for a moment, we conclude that, while it does have properties in common with concrete objects, it is a process, a dynamic rather than static entity. This object-in-process status gives it EVENT-like qualities. We know that the lexical item fire does not refer simply to an OBJECT or to an ACTION, facts which indicate semantic complexity. If fire is derivative from a complex structure such as object-in-process, we should show it as such and note, as we did about the derived word paint, what semantic content and structure the lexical item contains.[23] Now the object of the object-in-process is whatever is burning or on fire (besides "John" since the fire had to exist prior to his being burned up in it). The process (technically oxidation) might be indicated in a number of ways: oxidize, destroy, or burn. The RELATION between the object and the process seems to be REACTIVE in that the EVENT is a reaction to some prior force (we will not complicate the discussion or the diagram with irrelevant speculation as to the nature of this force). Thus we can present the revised form of Figure 22 as Figure 24.

---

[23] Unlike the verb paint which exists at the deepest level as OBJECT, the noun fire appears nowhere in the diagram for it is not fundamentally OBJECT or ACTION or any other REFERENT: it is the totality of these.

Figure 24


EVENT a.
REFERENT
RELATION
REFERENT
EVENT b.
AGENCY
(PREP)
in
EVENT c.
REFERENT
RELATION
REFERENT
REFERENT
RELATION
REFERENT
EVENT d.
DEGREE
ACTION
(PREP)
OBJECT
(N)
REACTIVE
Ø
ACTION
(PROCESS)
(V)
Ø
up
some un-
specified
material
destroy or
oxidize
REFERENT
RELATION
REFERENT
OBJECT
(N)
REACTIVE
ACTION
(V)
Ø
John
burn

Here EVENT b. becomes the lexical item fire.

Without a lengthy account, we can say for sentences containing verbs which refer to the destruction of life as opposed to physical objects that the diagrammatic difference in the presence of the RESPONSIVE in place of the REACTIVE. Thus, the general structural pattern for

(26) John was killed in the fire[24]

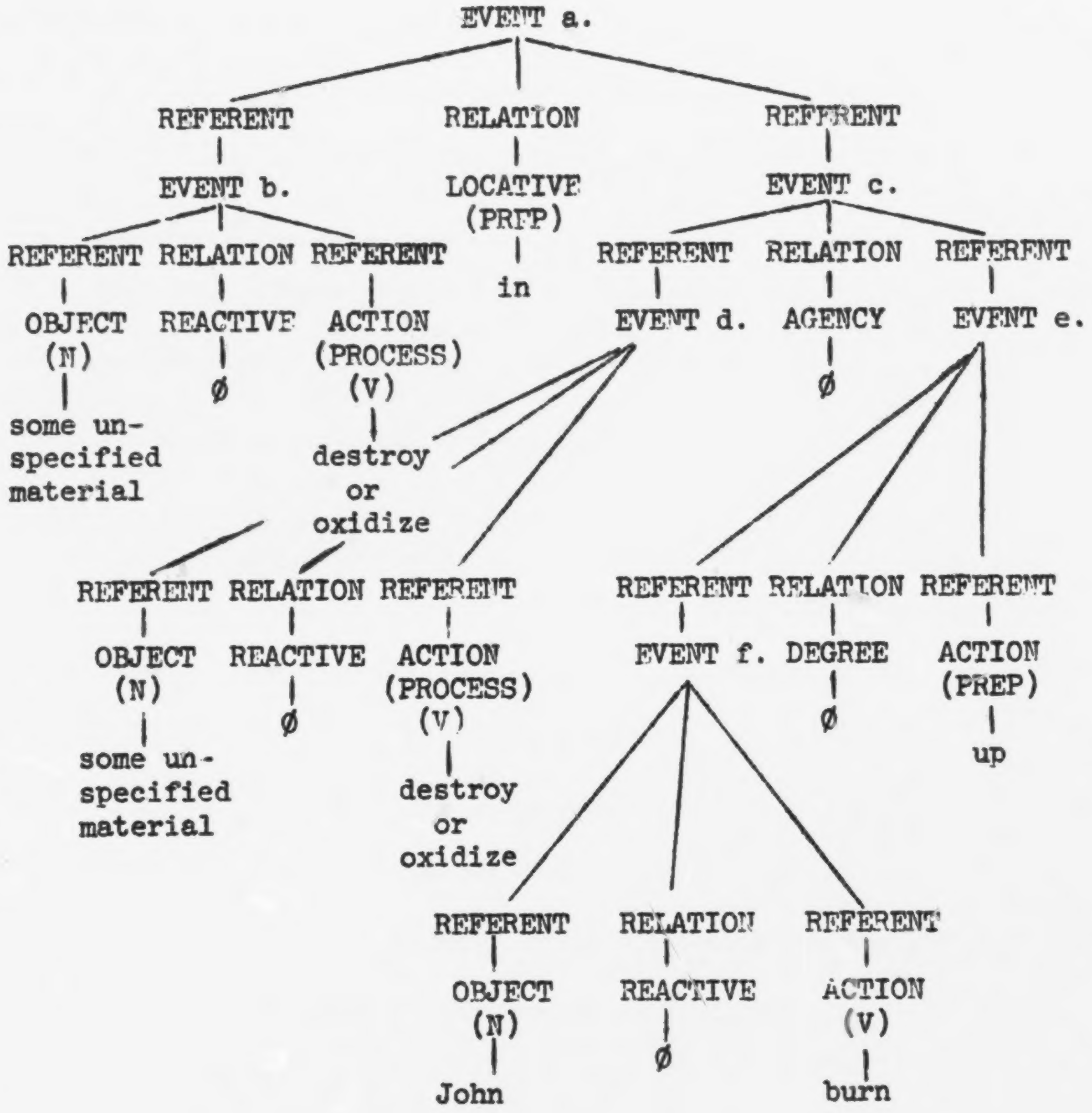
is the same as that for (21) (cf. footnote 22).

The fact that (26) could correspond to an underlying meaning which includes an unspecified AGENT, in which "the fire" is not AGENCY, suggests that the representation of (21) ought to include a LOCATIVE as well as an AGENCY. This additional fact is shown in Figure 25, which may be a more accurate account of (21) than Figure 24.

---

[24] This sentence is ambiguous: either the fire was the AGENCY of John's death or someone or something else was responsible for his death. Only the former meaning is compatible with the structure of Figure 24.

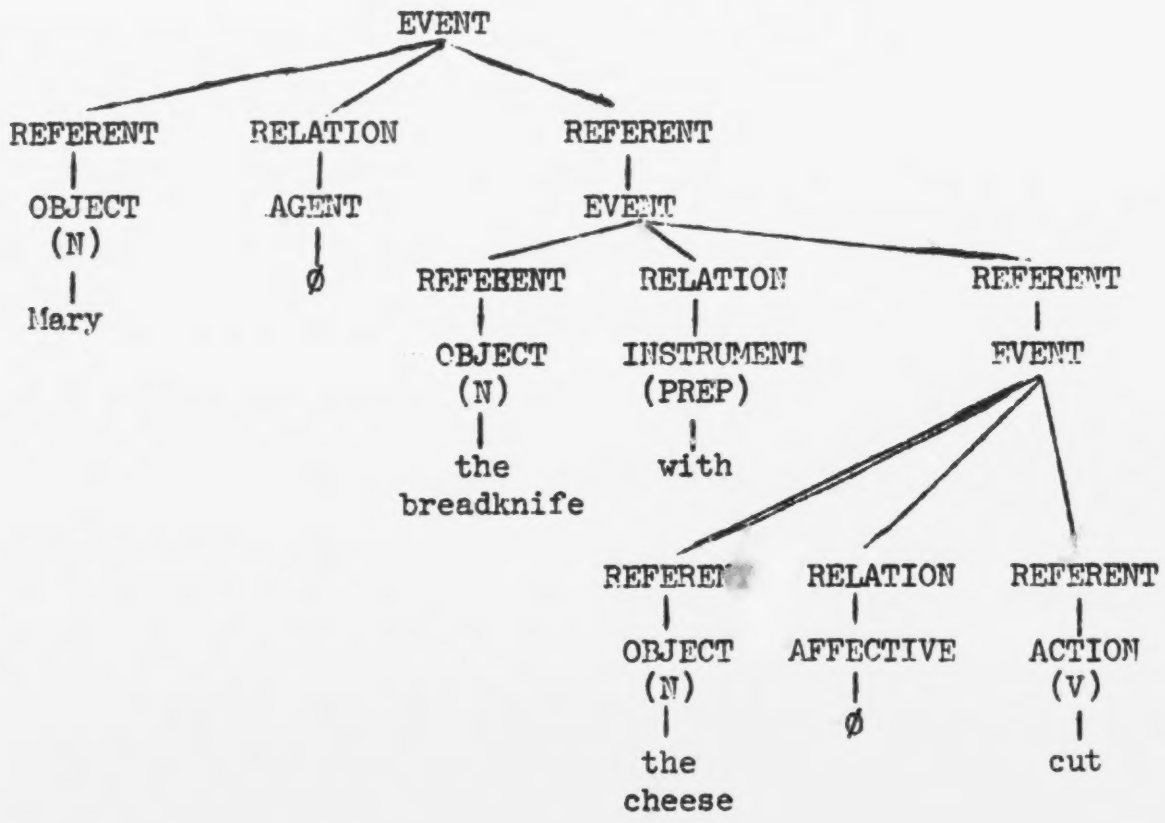
Figure 25


EVENT a.
REFERENT
RELATION
REFERENT
EVENT b.
LOCATIVE (PREP)
in
EVENT c.
REFERENT
RELATION
REFERENT
OBJECT (N)
REACTIVE
ACTION (PROCESS) (V)
some unspecified material
Ø
destroy or oxidize
REFERENT
RELATION
REFERENT
EVENT d.
AGENCY
Ø
EVENT e.
REFERENT
RELATION
REFERENT
OBJECT (N)
REACTIVE
ACTION (PROCESS) (V)
some unspecified material
Ø
destroy or oxidize
REFERENT
RELATION
REFERENT
EVENT f.
DEGREE
Ø
ACTION (PREP)
up
REFERENT
RELATION
REFERENT
OBJECT (N)
REACTIVE
ACTION (V)
John
Ø
burn

Turning now to a different set of sentences, we will test the system further:

(27) Mary cut the cheese with a breadknife.

Figure 26


EVENT
REFERENT
OBJECT
(N)
Mary
RELATION
AGENT
Ø
REFERENT
EVENT
REFERENT
OBJECT
(N)
the
breadknife
RELATION
INSTRUMENT
(PREP)
with
REFERENT
EVENT
REFERENT
OBJECT
(N)
the
cheese
RELATION
AFFECTIVE
Ø
REFERENT
ACTION
(V)
cut

Moving from left to right: "Mary" is AGENTive with respect to "cheese being cut with the knife"; "the knife" is INSTRUMENTal with respect to "cutting the cheese"; and "the cheese" is AFFECTIVE with respect to the ACTION "cutting."

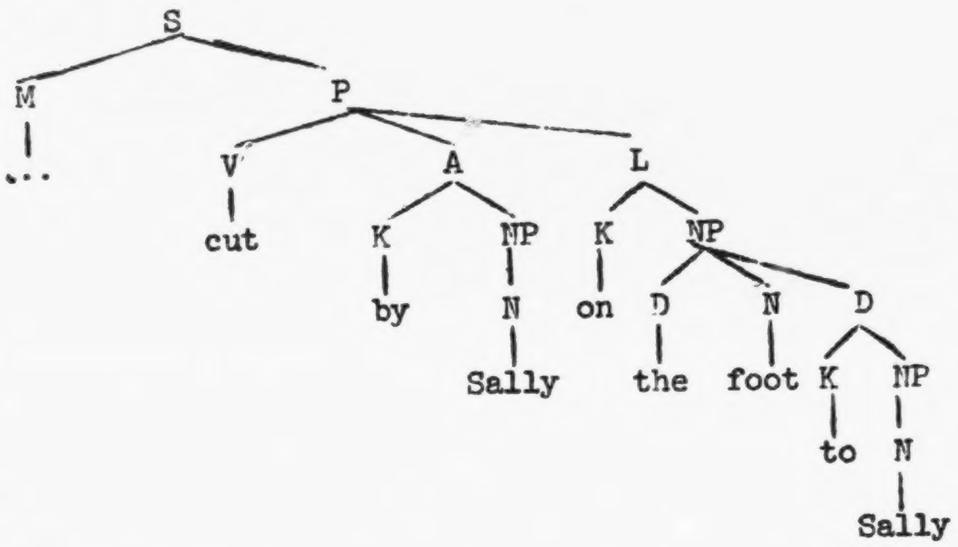
Now we are prepared to deal with the part-whole, INALIENABLE POSSESSION, problem especially as it is exemplified in sentences like:

(28) Sally cut herself on the foot with a knife at the swimming pool

(29) Sally cut her foot with a knife at the swimming pool

If we recall the discussion of INALIENABLE POSSESSION, we remember that constructions like "her foot" and "herself on the foot" involve an INALIENABLE POSSESSOR, "her" and "herself" (Sally), and an INALIENABLE POSSESSED, "foot." The relationship of POSSESSION accounts for the synonymity of the alternate forms "her foot" and "herself on the foot." We suggested first that the entire unit, the entire body, was in an AFFECTIVE RELATION to the ACTION "cut," that "foot" simply specifies where on the body the "cut" occurred. Secondly we concluded that it was "the foot" which was AFFECTIVE and that the "her being cut" was entailed by the stated meaning. Let us keep these two alternatives in mind, withholding any decision until their relative merits can appear more fully, and see what our system hypothesizes to be the appropriate semantic facts. We know, for instance, that older forms of syntactic-semantic grammar would treat these sentences in essentially two ways. First, (29) would be said to arise from an underlying structure containing a relative clause on the noun foot: " a foot which Sally has," and (28) would be said to have an underlying structure containing the verb "cut," the direct object noun "herself," and a prepositional phrase "on the foot." The fact that these two sentences are synonymous (differences in topicalization aside) makes such an analysis unacceptable. Second, in Fillmore's grammar, both (28) and (29) would be shown to arise from the same underlying structure though with the following type of notation:

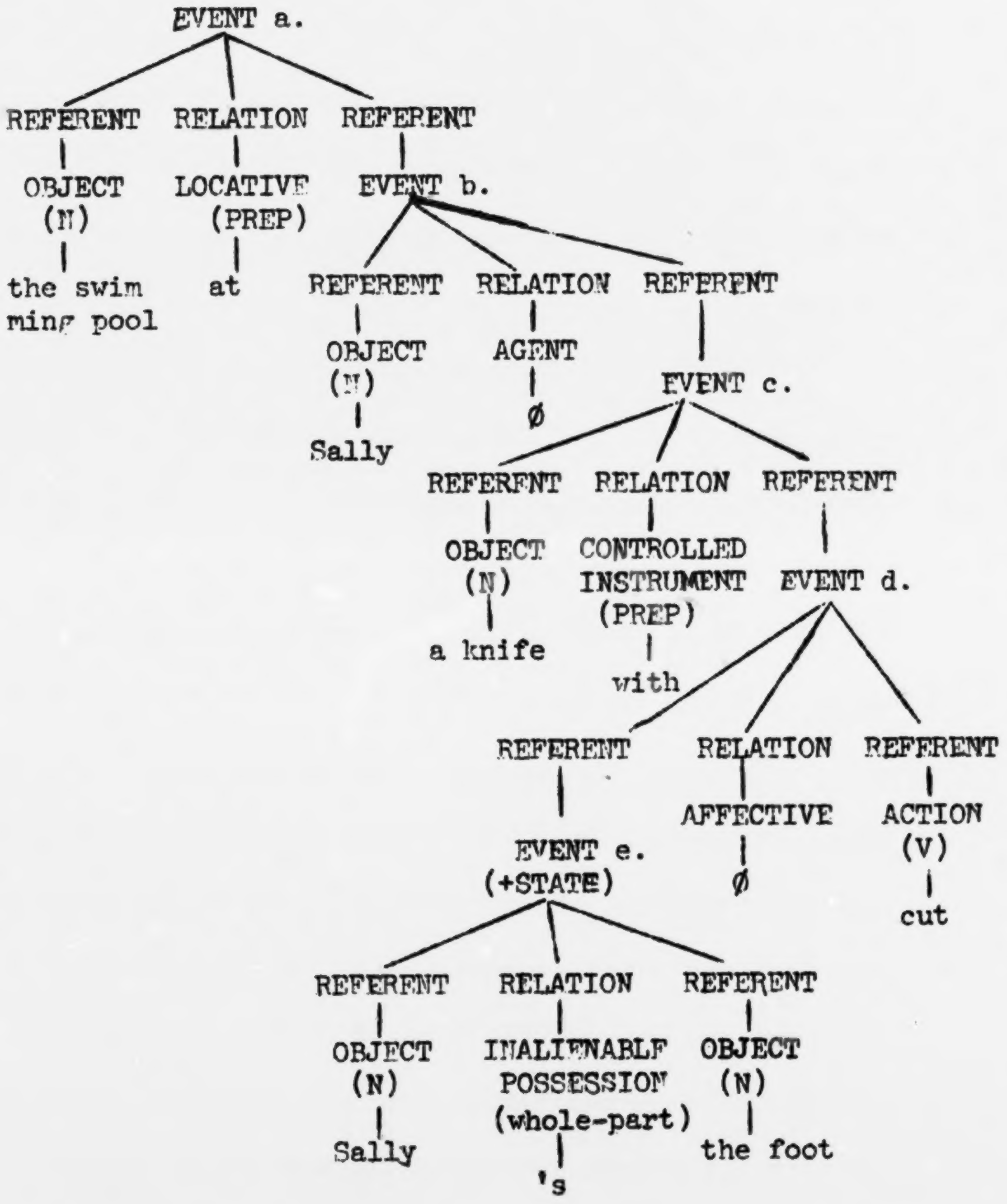
Figure 27



Here the POSSESSIVE relationship is shown by means of the "adnominal DATIVE." We might question this method in light of other uses to which the DATIVE is put which may not be consistent with this particular use. However, perhaps more serious is the consequence of making the POSSESSOR, in this case the "adnominal D," subordinate to the LOCATIVE. We could claim that the POSSESSOR ought to be in the superordinate position with perhaps equal justification. In fact, there may be no reason to hypothesize super- or subordinate positions for either one of the POSSESSIVE elements.

Let us now turn to the system of semantic rules we have developed to see how the meaning of (28)-(29) might best be represented if, indeed, the system is capable of the task. Furthermore, though not less significantly, we are interested in any decisions the system will make which might coincide with intuitions we have not yet probed.

Figure 28


EVENT a.
REFERENT
RELATION
REFERENT
OBJECT
(N)
LOCATIVE
(PREP)
EVENT b.
the swimming pool
at
REFERENT
RELATION
REFERENT
OBJECT
(N)
AGENT
Ø
Sally
EVENT c.
REFERENT
RELATION
REFERENT
OBJECT
(N)
CONTROLLED
INSTRUMENT
(PREP)
EVENT d.
a knife
with
REFERENT
RELATION
REFERENT
AFFECTIVE
Ø
ACTION
(V)
cut
EVENT e.
(+STATE)
REFERENT
RELATION
REFERENT
OBJECT
(N)
INALIENABLE
POSSESSION
(whole-part)
OBJECT
(N)
Sally
's
the foot

One new aspect of this structure is the LOCATIVE RELATION of the OBJECT REFERENT, "the swimming pool", to the entire structure contained within EVENT b. In syntactic terms, this is the "sentential locative." In EVENT b. the left REFERENT, "Sally," is AGENTively related to EVENT c., in which the left REFERENT, "a knife," holds the CONTROLLED INSTRUMENT relationship to EVENT d., which is "the cutting of Sally's foot." EVENT d., however, demands close examination to determine its meaning and adequacy.

In EVENT d. we have for the first time an EVENT--EVENT e.--in an AFFECTIVE RELATION to the ACTION, "cut." That such a precedent is justified is suggested by other situations in which this same set of structures is present. For example, the verb change, which takes an AFFECTIVE object, appears in sentences such as (30).

(30) The Admiral changed the ships' maneuvers

Here, the object "the ships' maneuvers" is a reduced sentential nominal from "the ships maneuver." The chief difference between "the ships maneuver" and "Sally has a foot" is that in the former one REFERENT is an OBJECT and one is an ACTION while in the latter both are OBJECTs. The implications of this difference are marked by the device ±STATE as a feature of the EVENT which contains the elements in correlation. The stative/non-stative division in language has long been recognized by linguists as a fundamental one, both syntactically and semantically. Thus, we can differentiate between the EVENT "the ships maneuver" and the EVENT "Sally has a foot" by marking the former -STATE and the latter +STATE.

Now the major question remains whether the ACTION "cut" in fact affects the +STATE EVENT, "Sally has a foot." It surely does not mean that after the action Sally no longer has a foot.[25] In other, more favorable terms, it does mean that the state of the whole-part (Sally-foot) is not the same as it was before the action. In these terms, which avoid the problems created by using the surface sentence "Sally has a foot" (which could never appear in this context), we now have an intuitively acceptable reading. One additional point should be made concerning the reason for placing EVENT e. as the left REFERENT of EVENT d.: the whole-part correlation exists prior to its being affected, that is, "cut."

We can conclude by noting that the lexical or morphological manifestation of the RELATION INALIENABLE POSSESSION may be either 's, of or a locational preposition, depending on certain superficial conditions. Thus we either "poke our eye," or "poke ourselves in the eye" we do not "*poke the eye of us," or "*poke ourselves on the eye." In the case of ALIENABLE POSSESSION different superficial constraints are exercised in producing sentences though the same morphological forms are used in signaling this RELATION. The diagrammatic configuration for this RELATION is the same as that for INALIENABLE POSSESSION with the exception of the appropriate RELATION marking. There seems little reason, therefore, to produce an exemplary figure and discussion at this time.

---

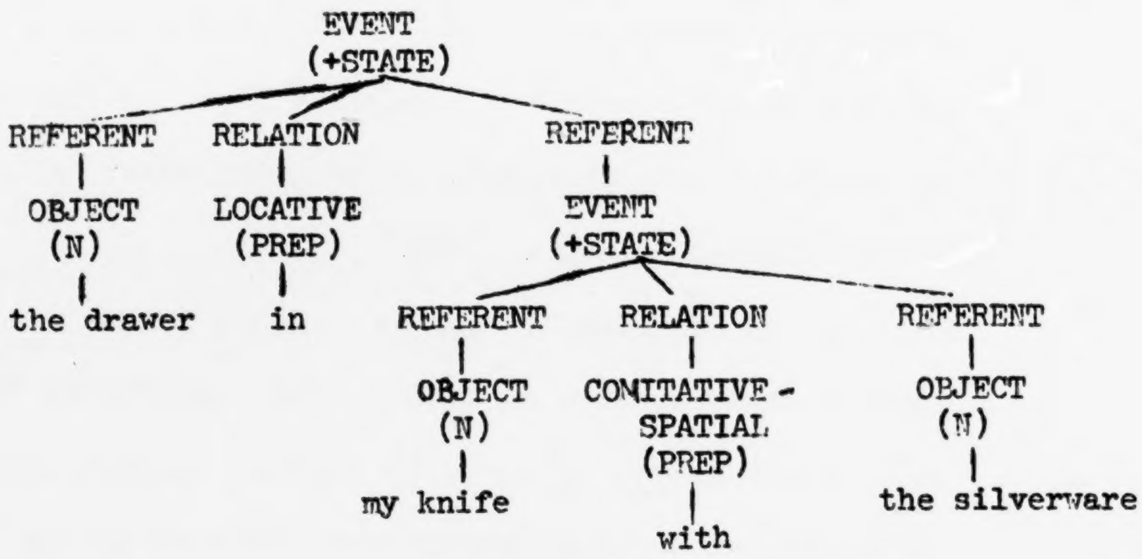
[25] Though its support for the sentence at hand is questionable, we might make the observation that the sentence "Sally cut her foot off" would indeed mean that the +STATE EVENT, "Sally has a foot," which is true prior to the action, is no longer true after it. What this means is that the sentence containing "off" is a more extreme and, therefore, clearcut example to support the EVENT-AFFECTIVE-ACTION sequence.

Now let us turn to the COMITATIVE RELATION as it is exhibited in sentences like (31):

(31) My knife is the drawer with the silverware

Here we have the COMITATIVE-SPATIAL RELATION as indicated in Chapter II. Figure 29 represents our system's account of the meaning of (31).

Figure 29


EVENT
(+STATE)
REFERENT
OBJECT
(N)
the drawer
RELATION
LOCATIVE
(PREP)
in
REFERENT
EVENT
(+STATE)
REFERENT
OBJECT
(N)
my knife
RELATION
COMITATIVE-SPATIAL
(PREP)
with
REFERENT
OBJECT
(N)
the silverware

Here "the drawer" is LOCATIVEly related to the EVENT (+STATE), "my knife with the silverware." As indicated in the previous discussion, the embedded EVENT is +STATE in accordance with its content: two OBJECTs in correlation. Otherwise, Figure 29 is straightforward in its meaning. We can see, for example, another possible form of sentence (31) from the diagram:

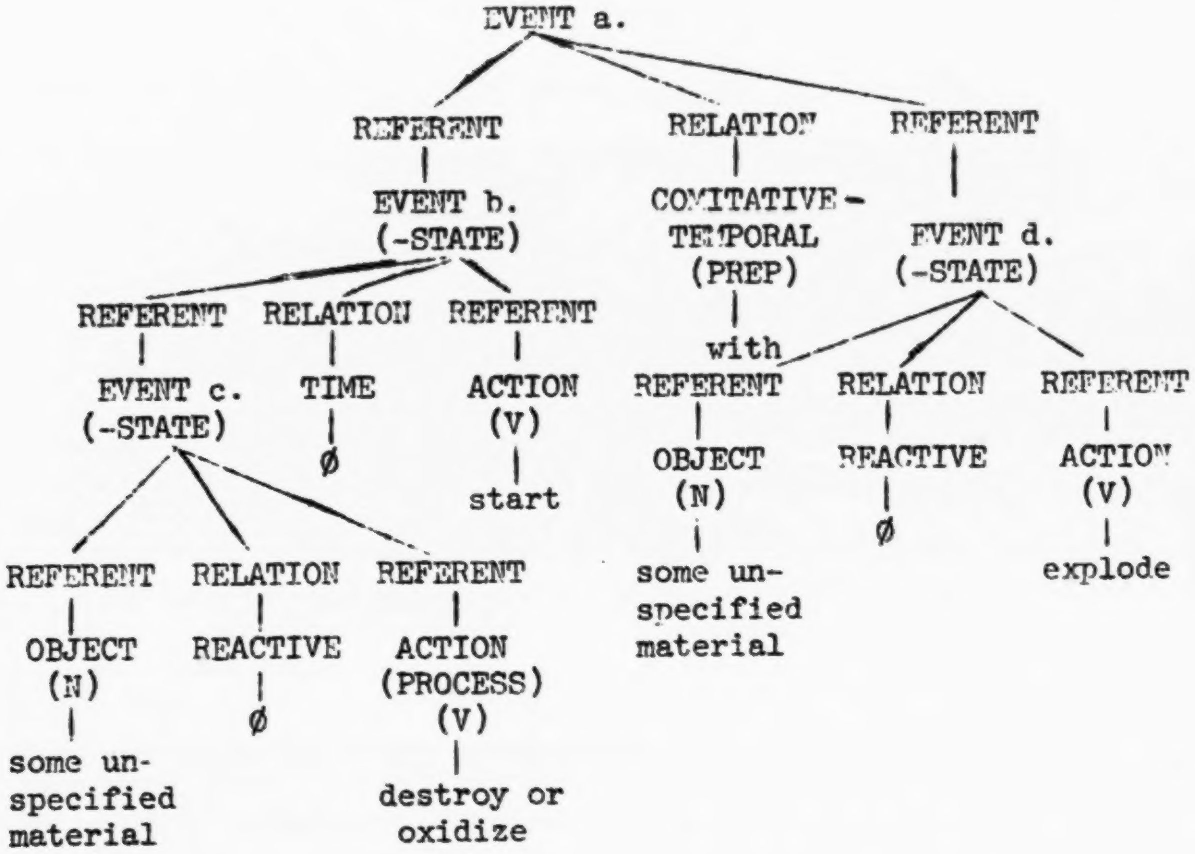
(32) My knife is with the silverware in the drawer

A slightly more complicated sentence is (33):

(33) The fire started with the explosion

Here we have the same problem of the derived noun "fire" as we had in (21) (John burned up in the fire). In addition, "explosion" is a fundamental verb--explode--which must be represented as such. Figure 30 attempts to account for these facts as well as others pertinent to the meaning of (33).

Figure 30


EVENT a.
REFERENT
EVENT b.
(-STATE)
REFERENT
EVENT c.
(-STATE)
REFERENT
OBJECT
(N)
some unspecified material
RELATION
REACTIVE
Ø
REFERENT
ACTION
(PROCESS)
(V)
destroy or oxidize
RELATION
TIME
Ø
REFERENT
ACTION
(V)
start
RELATION
COMITATIVE-TEMPORAL
(PREP)
with
REFERENT
EVENT d.
(-STATE)
REFERENT
OBJECT
(N)
some unspecified material
RELATION
REACTIVE
Ø
REFERENT
ACTION
(V)
explode

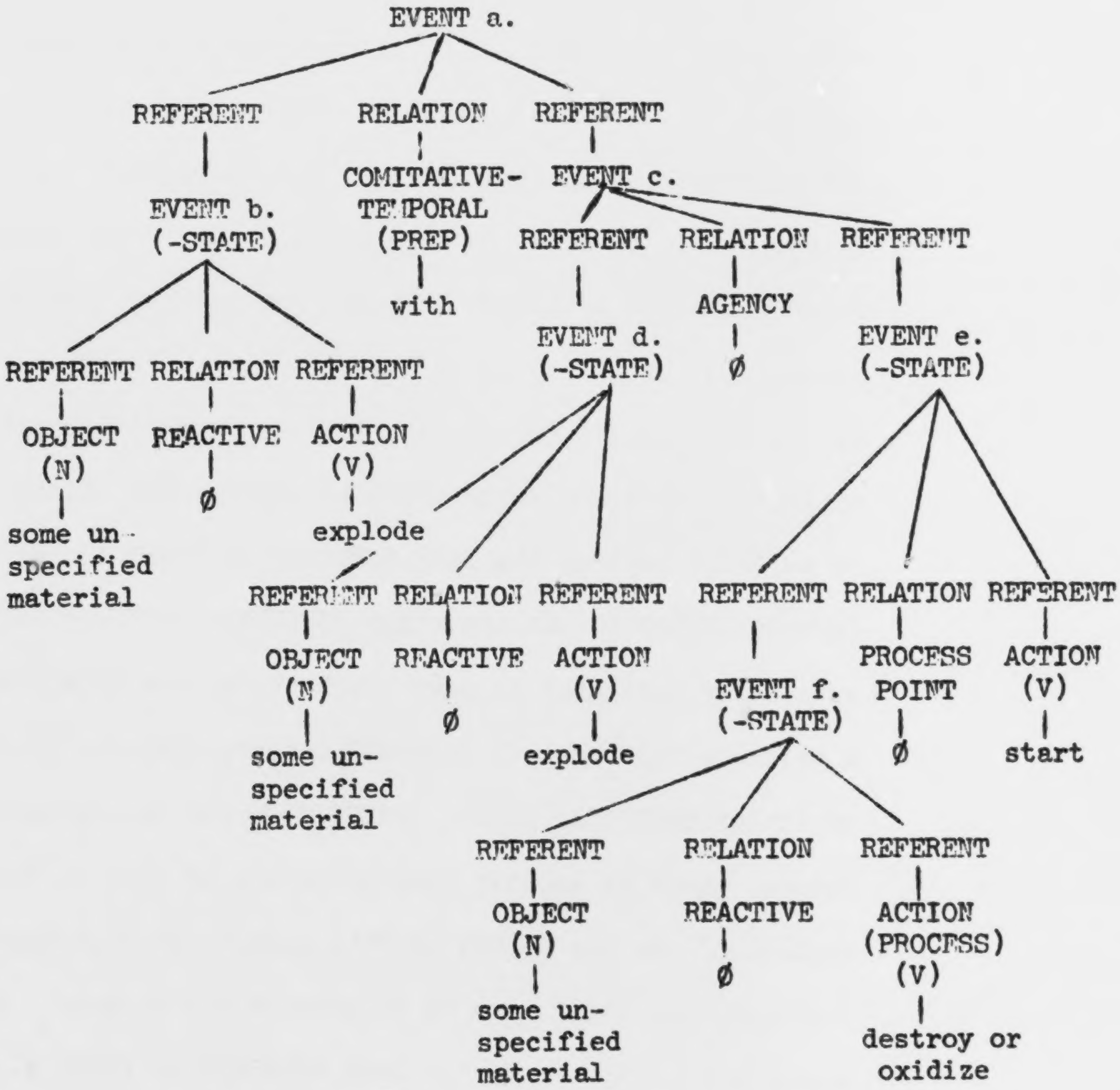
EVENT c. has the same form and content as EVENT b. of Figure 24. The former is, in addition, correlated temporally with the ACTION "start," which refers to the initiation of a process, that is, EVENT c. TIME may not be the best way to represent the RELATION between a process and a point in that process; perhaps PROCESS POINT or some other more descriptive term would be better to deal with a RELATION which is common to all processive EVENTs (more precisely, ACTIONs). *Explode* is a verb of destruction and, therefore, the structure of EVENT d. is the same as that of EVENT c. EVENTs b. and d.

are appropriately correlated with the RELATION COMITATIVE-TEMPORAL.

There is some information left out of Figure 30 for the same reason as in Figure 24. The fact that EVENTs c. and d. contain the RELATION REACTIVE requires the presence of some prior AGENT or AGENCY. This information is not specified in sentence (33) and was omitted from the figure because it was not relevant to the discussion of the COMITATIVE. However, it is worthwhile to describe some facts about a full diagram including AGENT or AGENCY. First, the lack of specification leaves (33) ambiguous in at least two ways: AGENT or AGENCY could be the appropriate correlation for the unspecified prior OBJECT or EVENT. This ambiguity could be represented in the form of an EVENT between the left REFERENT of EVENT a. and EVENT b. in which EVENT b. was the right REFERENT; AGENT or AGENCY optionally indicated in wavy brackets was the RELATION, and a triangle was the left REFERENT, leaving open the possibility of either OBJECT or EVENT. EVENT d. would be similarly embedded. Second, there is another interpretation of (33) in which "the explosion" was the AGENCY of "the fire." In this case certain modifications would have to be made in the diagram. EVENT d. would have to appear as the left REFERENT of EVENT a. and EVENT b. as the right REFERENT, in keeping with semantic order.

Moreover, EVENT d. would have to be repeated in an AGENCY correlation with EVENT b. Thus EVENT d. is the potential unspecified first REFERENT of AGENCY. Figure 31 represents this possibility.

Figure 31


EVENT a.
REFERENT
RELATION
REFERENT
EVENT b.
(-STATE)
COMITATIVE-TEMPORAL
(PREP)
with
EVENT c.
REFERENT
RELATION
REFERENT
REFERENT
RELATION
REFERENT
OBJECT
(N)
REACTIVE
Ø
ACTION
(V)
some unspecified material
explode
EVENT d.
(-STATE)
AGENCY
Ø
EVENT e.
(-STATE)
REFERENT
RELATION
REFERENT
OBJECT
(N)
REACTIVE
Ø
ACTION
(V)
some unspecified material
explode
REFERENT
RELATION
REFERENT
EVENT f.
(-STATE)
PROCESS POINT
Ø
ACTION
(V)
start
REFERENT
RELATION
REFERENT
OBJECT
(N)
REACTIVE
Ø
ACTION
(PROCESS)
(V)
some unspecified material
destroy or oxidize

Even this fairly complicated diagram does not contain the unspecified REFERENT which holds an AGENT or AGENCY RELATION to EVENT b. and d. Yet we can see that possibility, as well as the information we have just accounted for, as one possible meaning of sentence (33). If we had taken the position that RELATIONs could be complex, the information in Figure 31 could have been captured in Figure 30 by simply adding the RELATION AGENCY under the COMITATIVE of EVENT a. and reversing the order of EVENTs b. and d. of Figure 30. Yet this alternative would clearly have not given us the degree of diagrammatic accuracy of Figure 31 since each aspect of the meaning has its own character and is only obscured by a configuration which fails to capture the semantic "unpacking" of a complete analysis.

Notice that while we had to place the EVENT containing "the explosion" in the left of the diagram which represents the meaning of "the explosion" as AGENCY of "the fire," the order of EVENTs b. and d. in Figure 30 is irrelevant if they are only related temporally as two simultaneous EVENTs. In fact, any order given to them in the figure misrepresents the total lack of priority either has over the other. The best way to represent them would be to have one on top of the other to show this lack of order. However, the system we are using is, as perhaps any schematic system, limited to the determination of some order. We as users of the system must bear the responsibility of understanding what the configuration means rather than appears to mean.

We now turn to the last and most difficult type of sentences to be examined: those containing the indirect object construction. We need to distinguish at the outset between sentences of the EVENT-FROM-TO form and the "true" indirect object sentences. In sentences like

(34) John walked from Boston to New York

(35) John carried the package from here to there

(36) John took the present from Boston to New York

it is the entire EVENT---"John walking," "John carrying the package," "John taking the present"--which proceeds from one point to the next. Even in some sentences involving "people-from" and "people-to," it is the entire EVENT which moves, for example, "from Harry" "to Karl," and they are for all relevant semantic purposes LOCATIVE:

(37) John walked from Betty to George

(38) John carried the package from Harry to Karl

(39) John took the present from Marilyn to Sam

There is a reading of the last two sentences, (38)-(39), in which the "from" phrase is a restrictive relative clause: "which was from...." In this case the basic sentence less the relative clause is:

(40) John carried the package to Karl

(41) John took the present to Sam

Here again, however, it is the entire EVENT which proceeds to "X." We can make the general observation that any sentence in which the entire EVENT including AGENT or AGENCY proceeds from one point to another--for example, those containing verbs like take, carry, walk and other verbs of motion, either transitive or intransitive--the OBJECT in a relationship signaled by from is LOCATIVE+SOURCE and the OBJECT in a correlation signaled by to is LOCATIVE+RECEPTIVE. Such sentences are not members of the "indirect object" set.

In true "indirect object" sentences like:

(42) John sent the present from Mary to Karl

(43) John gave the present from Mary to Karl

(44) John distributed the food from the general to the men

the "from" phrase is a restrictive relative clause, "which was from X," and the basic sentence, less the relative clause, is:

(45) John sent the present to Karl

(46) John gave the present to Karl

(47) John distributed the food to the men

In contradistinction to sentences (34)-(39), sentences (42)-(47) show only the object-in-motion proceeding to "X." Is there a "from" relationship indicated in sentences like (45)-(47)? In synonymous variations of these sentences:

(48) Karl received the present from John

(49) The men received the food from John

the AGENT "John" appears in the "from" phrase. This fact suggests that the "John" of (45)-(49) is both AGENT and SOURCE. But how are we to reconcile this claim with those sentences in which a restrictive relative clause of SOURCE occurs? The answer lies in the knowledge that the restrictive relative designates the original SOURCE and that the AGENT+SOURCE designates the SOURCE with reference to the specified act of transference.[26]

---

[26] We use the notation of AGENT+SOURCE to refer to the complex RELATION of which "John" is a REFERENT as "John" exists in the sentence under examination. This is not to imply that the postulated underlying semantic structure does not separate these two RELATIONs. The necessity for separation will be demonstrated in the discussion of steal which requires different AGENT and SOURCE OBJECTs.

Figure 32 represents the semantic structure of (36):[27]

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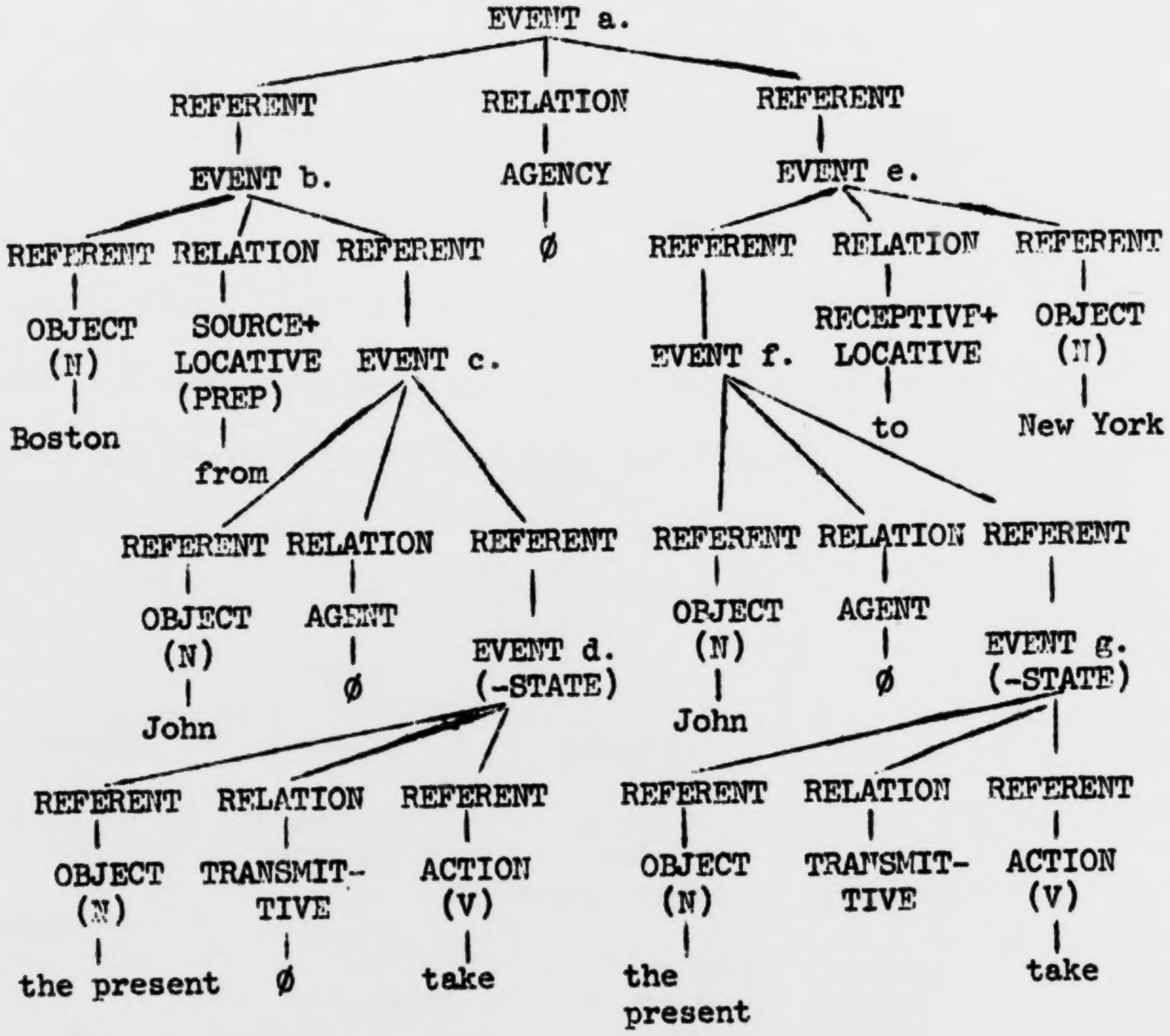
[27] We have not developed the semantic apparatus to deal with restrictive relative clauses and will not do so in this paper. Therefore, we will not analyze any sentences containing this structure.

(36) John took the present from BOston to New York.

Figure 32


EVENT a.
REFERENT
RELATION
REFERENT
EVENT b.
AGENCY
Ø
EVENT e.
REFERENT
RELATION
REFERENT
OBJECT (N)
Boston
SOURCE+ LOCATIVE (PREP)
from
EVENT c.
REFERENT
RELATION
REFERENT
EVENT f.
RECEPTIVE+ LOCATIVE
to
OBJECT (N)
New York
REFERENT
RELATION
REFERENT
OBJECT (N)
John
AGENT
Ø
EVENT d. (-STATE)
REFERENT
RELATION
REFERENT
OBJECT (N)
John
AGENT
Ø
EVENT g. (-STATE)
REFERENT
RELATION
REFERENT
OBJECT (N)
the present
TRANSMIT-TIVE
Ø
ACTION (V)
take
REFERENT
RELATION
REFERENT
OBJECT (N)
the present
TRANSMIT-TIVE
ACTION (V)
take

This figure represents the general paradigm of those sentences in which some EVENT proceeds from one place to another. The content of EVENT b. shows the departure of EVENT c. in a SOURCE+LOCATIVE RELATION to "Boston." EVENT b. is cast in the AGENCY RELATION to EVENT e., the arrival of EVENT f. in a RECEPTIVE+LOCATIVE RELATION to "New York." The process of EVENT b. designated by the ACTION "take" produces EVENT e.[28]

EVENTS c. and f. have the same content, for it is the same EVENT which bears the different relationships to "Boston" and to "New York." An alternate way to diagram the sentence is illustrated in Figure 33.

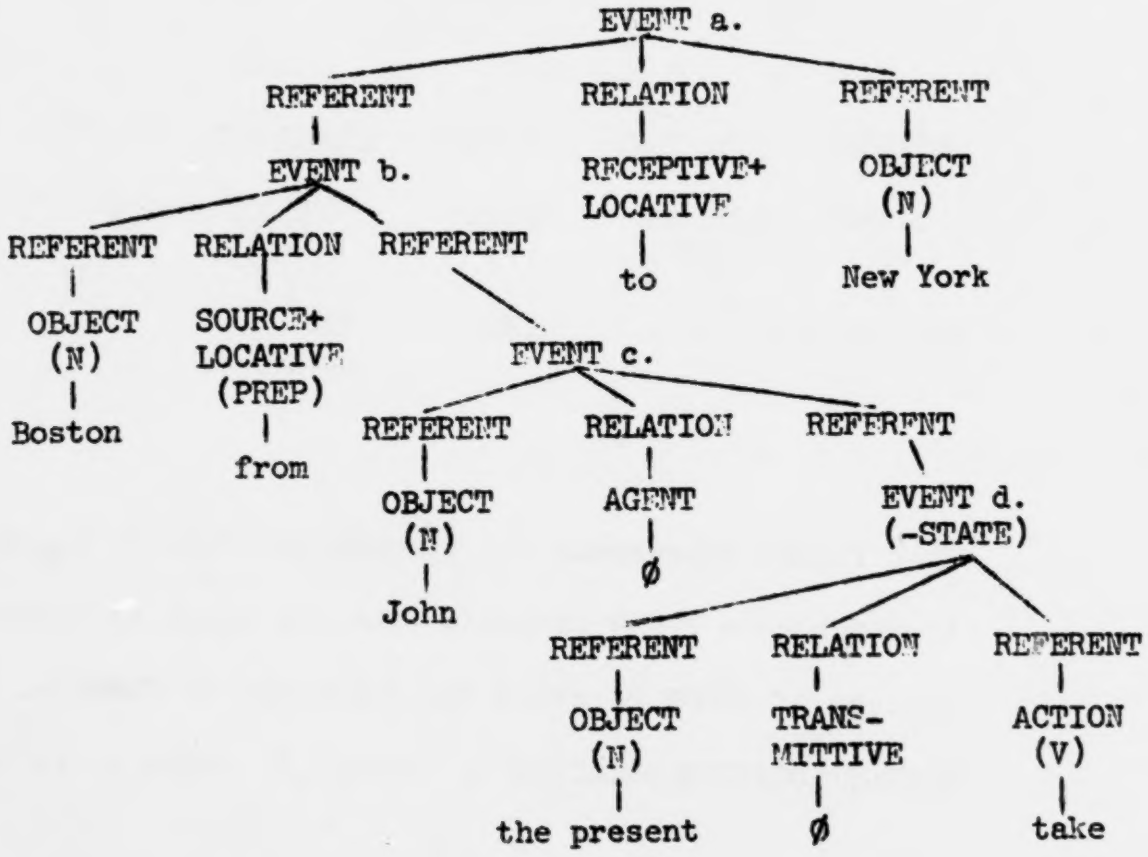


Figure 33

EVENT a.
REFERENT
RELATION
REFERENT
EVENT b.
RECEPTIVE+ LOCATIVE
to
OBJECT (N)
New York
REFERENT
RELATION
REFERENT
OBJECT (N)
Boston
SOURCE+ LOCATIVE (PREP)
from
EVENT c.
REFERENT
RELATION
REFERENT
OBJECT (N)
John
AGENT
Ø
EVENT d. (-STATE)
REFERENT
RELATION
REFERENT
OBJECT (N)
the present
TRANS- MITTIVE
Ø
ACTION (V)
take

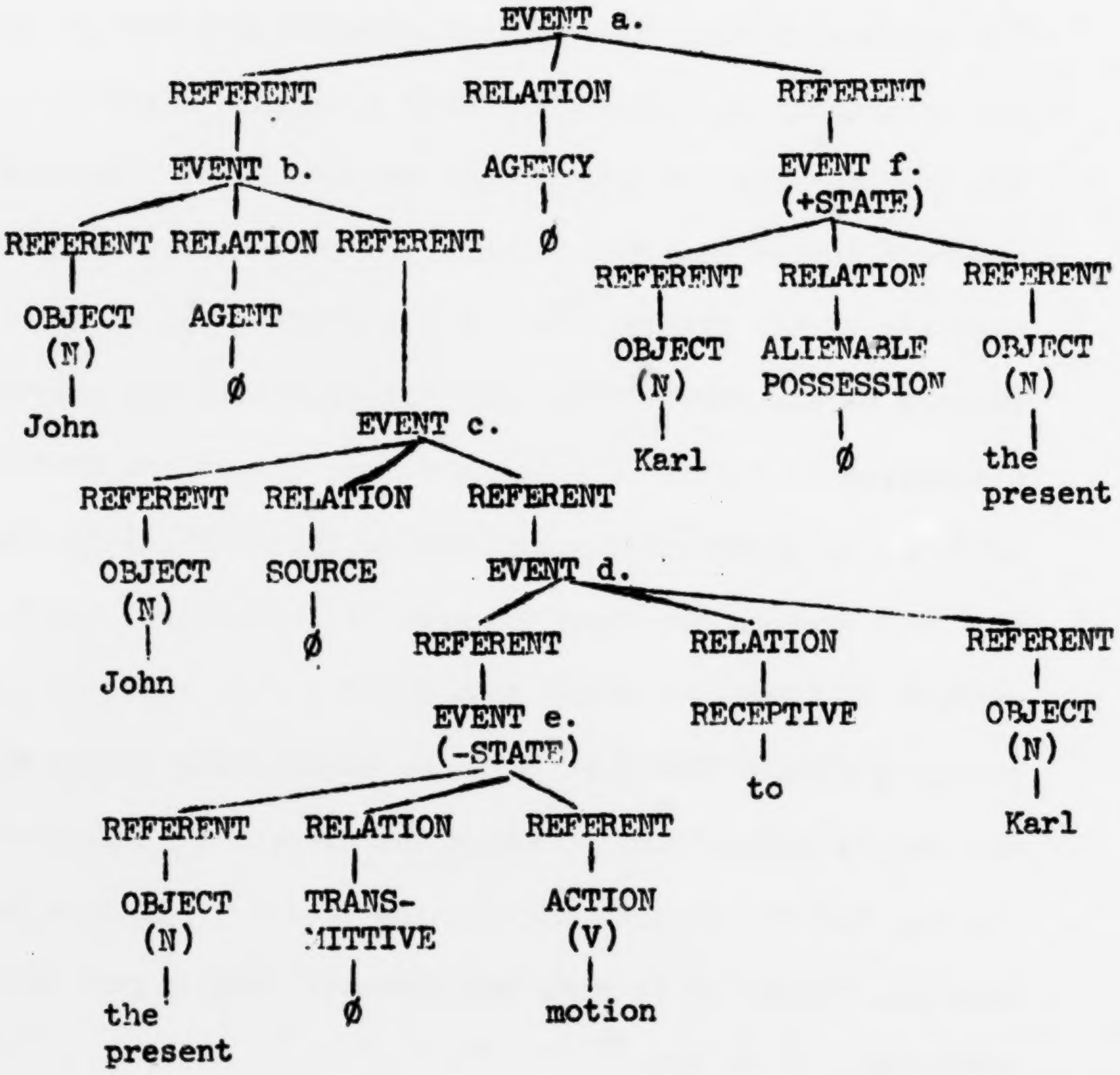
---

[28] Some serious questions can be raised about the appropriateness of the AGENCY RELATION. We will not deal with these, however.

The apparent merits of this configuration are that it eliminates the redundancy in Figure 32--EVENT c. equals EVENT f.--and the questionable, if not ad hoc, use of AGENCY. However, such apparent merits must be secondary to the fuller semantic adequacy of the figure. We believe EVENT c. to be appropriately related to the REFERENT "New York" as stated in the previous discussion of Figure 32. For the same reason the REFERENT EVENT c. is appropriately related to the REFERENT "Boston." The only serious question to raise is, therefore, whether the content of EVENT b., other than EVENT c., is suitably related to the REFERENT "New York." Is it appropriate to say that the entire unit--"John's taking the present from Boston"--is "to New York"? Is this the meaning of (36)? If this is the meaning, Figure 33 is more satisfactory than figure 32; otherwise, it is not.

The form of sentences containing the indirect object construction is illustrated in Figure 34, which represents the meaning of (46).

Figure 34


EVENT a.
REFERENT
RELATION
REFERENT
EVENT b.
AGENCY
Ø
EVENT f.
(+STATE)
REFERENT
RELATION
REFERENT
OBJECT
(N)
AGENT
Ø
John
REFERENT
RELATION
REFERENT
OBJECT
(N)
ALIENABLE
POSSESSION
OBJECT
(N)
Karl
Ø
the
present
EVENT c.
REFERENT
RELATION
REFERENT
OBJECT
(N)
SOURCE
Ø
John
EVENT d.
REFERENT
RELATION
REFERENT
EVENT e.
(-STATE)
RECEPTIVE
to
OBJECT
(N)
Karl
REFERENT
RELATION
REFERENT
OBJECT
(N)
TRANS-
MITTIVE
Ø
ACTION
(V)
the
present
motion

EVENT b., "John's putting the present in motion from himself to Karl," is correlated with AGENCY to EVENT f., "Karl's possession of the present." The justification of EVENT f. is the knowledge that the meaning of (46) includes "Karl's possession of the present," knowledge revealed by the anomaly of (50):[29]

(50) *John gave the present to Karl but he (Karl) never had it

EVENT b. represents "John" as AGENTively related to EVENT c., which in turn represents "John" in a SOURCE RELATION to EVENT d. EVENT d. contains EVENT e., "the present in motion," related RECEPTIVEly to "Karl "; "the present in motion is to Karl."

Let us contrast this figure and the meaning of (46) with that of (45) (John sent the present to Karl). The former sentence states that "Karl receives" and, therefore, "possesses the present." However, as (51) shows, (45) does not state either reception or possession:

(51) John sent the present to Karl but he never received it

Thus, the "but" clause of (50) is a denial of the first clause of (50), but the "but" clause of (51) is not a denial of the first clause of (51). The figure which represents the meaning of (45) consists only of EVENT b. in Figure 34 with the minor difference that "motion" in EVENT e. would be the

---

[29] If possession is only entailed by transfer and not a part of its meaning, a "but" clause containing such a negation would also produce an anomalous sentence. For example, the sentence "*John burned up in the fire but he didn't die" is anomalous even though the entailed meaning is negated and not the stated meaning of "John burned up in the fire." Our analysis is, then, unsupported at this point except by the belief that possession is included in the meaning of transfer.

verb *send*.[30], [31]

---

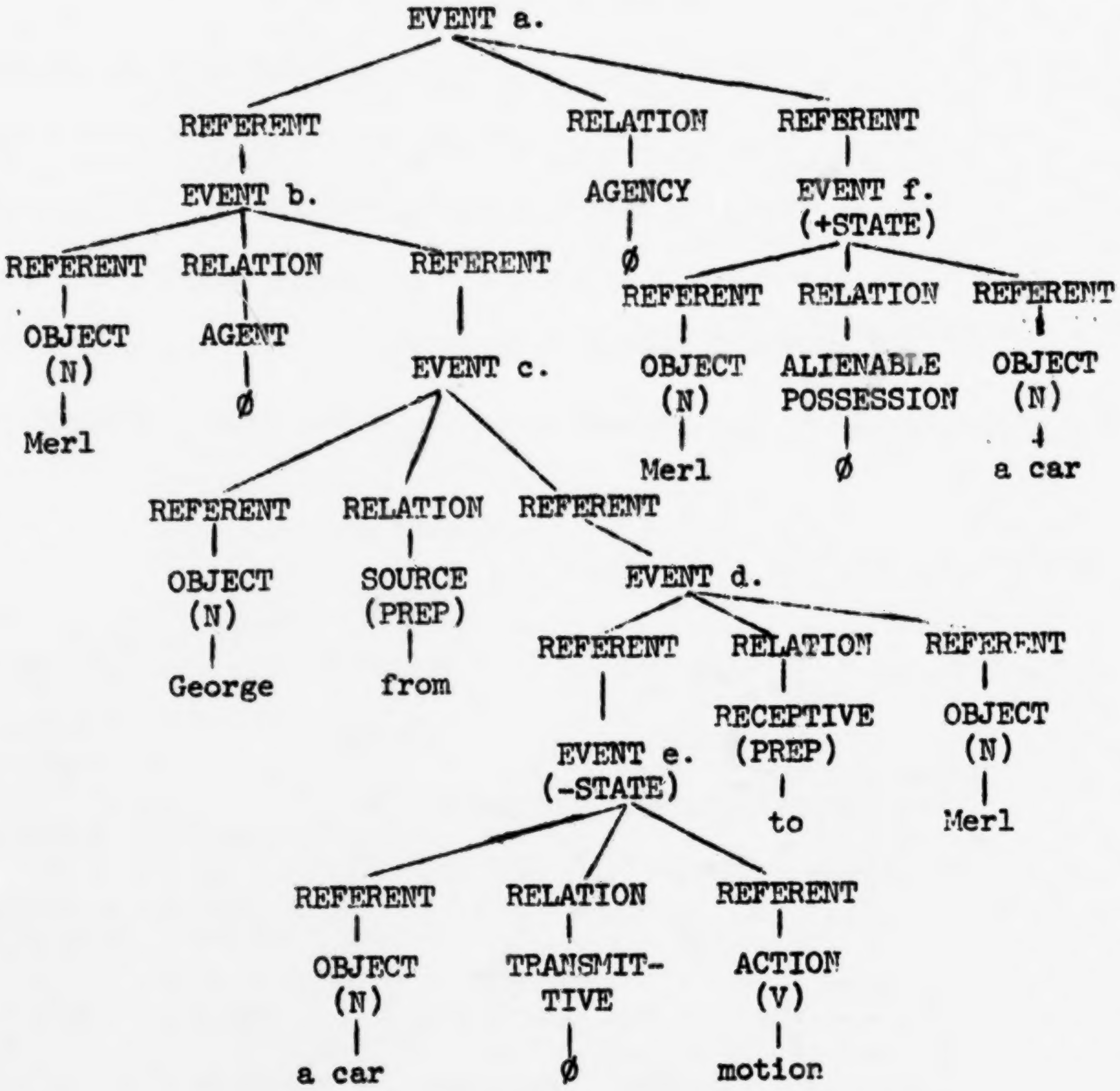
[30] The reason for the more general term "motion" in Figure 34 instead of, for example, a verb like *send* is that the meaning of (46) does not specify the nature of the motion: in other words, it might have been some quite different action than *send* indicates.

[31] It may be that the RELATION of EVENT d., RECEPTIVE, would differ for an accurate representation of (46). Perhaps, it would be better to designate the RELATION as one of DIRECTION since the definition of RECEPTIVE (Chapter II, p.74) might well conflict with incomplete transference.

Let us now turn to a sentence which contains the verb *steal* in order to confirm our earlier hypothesis that AGENT and SOURCE should be separately represented (cf. footnote 26). Sentence (52) is presented diagrammatically in Figure 35.

(52) Merl stole a car from George.

Figure 35


EVENT a.
REFERENT
EVENT b.
REFERENT
OBJECT (N)
Merl
RELATION
AGENT
Ø
REFERENT
EVENT c.
REFERENT
OBJECT (N)
George
RELATION
SOURCE (PREP)
from
REFERENT
EVENT d.
REFERENT
EVENT e. (-STATE)
REFERENT
OBJECT (N)
a car
RELATION
TRANSMIT-TIVE
Ø
REFERENT
ACTION (V)
motion
RELATION
RECEPTIVE (PREP)
to
REFERENT
OBJECT (N)
Merl
RELATION
AGENCY
Ø
REFERENT
EVENT f. (+STATE)
REFERENT
OBJECT (N)
Merl
RELATION
ALIENABLE POSSESSION
Ø
REFERENT
OBJECT (N)
a car

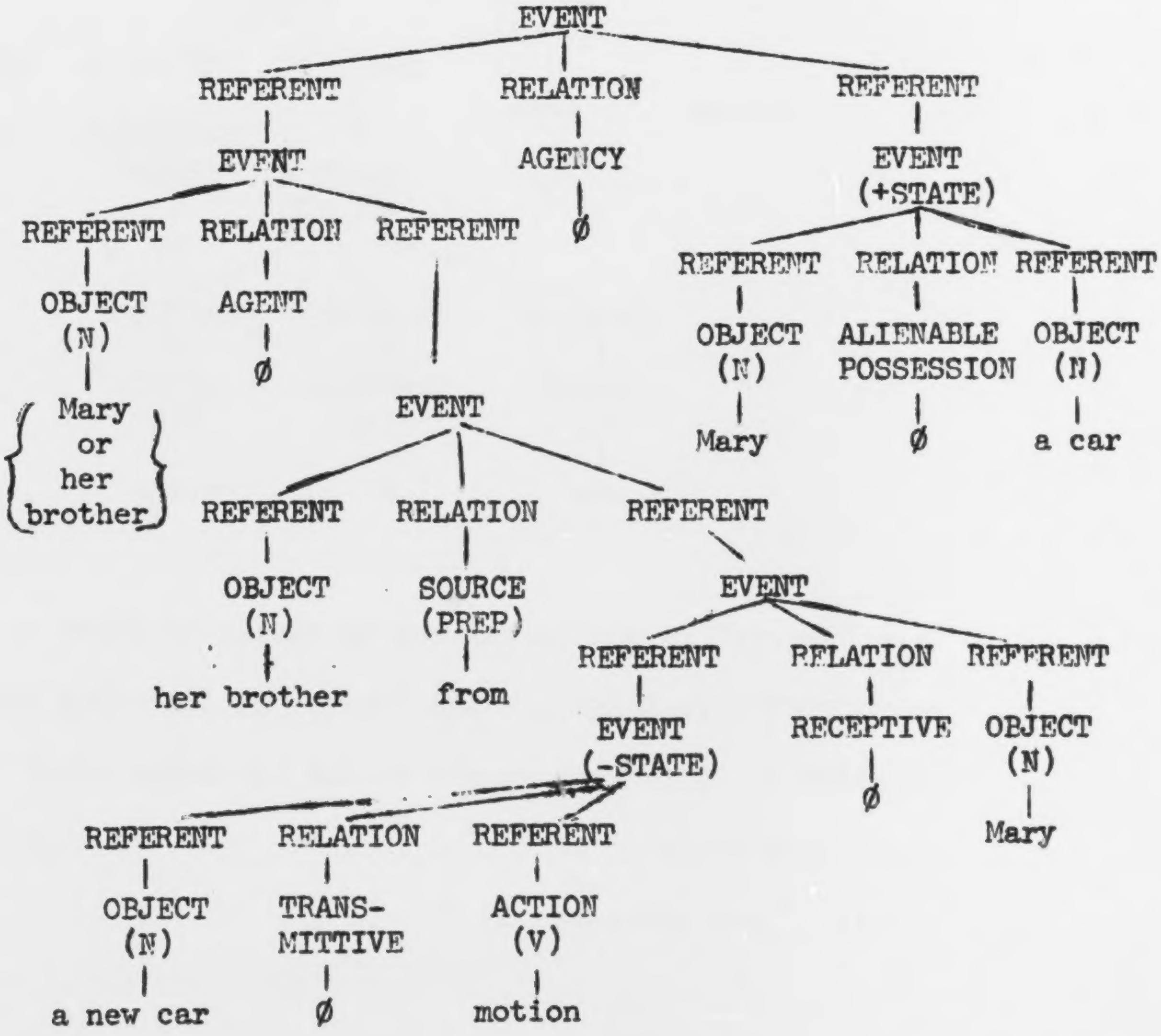
Here "George" is now correlated by SOURCE in EVENT c.; "Merl," by RECEPTIVE in EVENT d.; and "Merl," by ALIENABLE POSSESSION in EVENT f. This corresponds to our knowledge that "the car comes from George," that "it goes to Merl" and that, as a result, "Merl possesses it."

If we recall the discussion of the verb acquire and its ambiguity in sentences like (53):

(53) Mary acquired a new car from her brother

we find that we can now easily represent the fact that "Mary" can be either AGENT+RECEPTIVE or RECEPTIVE and that if "Mary" is the former, "her brother" is simply SOURCE, and if the latter, "her brother" is complexly AGENT+SOURCE. Figure 36 through the device of wavy brackets accounts for this ambiguity.

Figure 36


EVENT
REFERENT
RELATION
REFERENT
EVENT
AGENCY
Ø
EVENT
(+STATE)
REFERENT
RELATION
REFERENT
OBJECT
(N)
AGENT
Ø
Mary
or
her
brother
EVENT
REFERENT
RELATION
REFERENT
OBJECT
(N)
ALIENABLE
POSSESSION
OBJECT
(N)
Mary
Ø
a car
REFERENT
RELATION
REFERENT
OBJECT
(N)
SOURCE
(PREP)
her brother
from
EVENT
REFERENT
RELATION
REFERENT
EVENT
(-STATE)
RECEPTIVE
Ø
OBJECT
(N)
Mary
REFERENT
RELATION
REFERENT
OBJECT
(N)
TRANS-
MITTIVE
ACTION
(V)
a new car
Ø
motion

234

This completes our efforts to validate the generative capabilities of the system of rules we have developed. We have examined a small number of different types of sentences and have found the system to adequately represent these sentences. We have not tried to make the system accountable for many details of language such as the determiner system or restrictive relative clauses, though a fairly simple addition to the set of phrase structure rules could provide for the latter. What we shall now attempt is to set forth a procedure for analyzing sentences into well-formed semantic structures. The task of this section is, then, to suggest the steps whereby we can take a sentence and explicitly analyze it in such a way that the form of its oorrelary diagram would be apparent and its creation, therefore, a mechanical exercise rather than an intuitive guess. The technique we shall employ is one of paraphrase and semantic immediate constituent analysis. Paraphrase will involve a determination of all the relevant units of meaning and an ordering of those units within subunits of the semantic whole or total EVENT. We have at our disposal the concepts REFERENT and RELATION and we shall use them to determine connections between lexical items and fundamental semantic structures. The semantic immediate constituent analysis will involve an ordering of subunits, EVENTs, and a determination of dependency relationships in harmony with semantic intuitions. If we take an example of a very simple sentence we can illustrate the two tasks.

(54) John walked

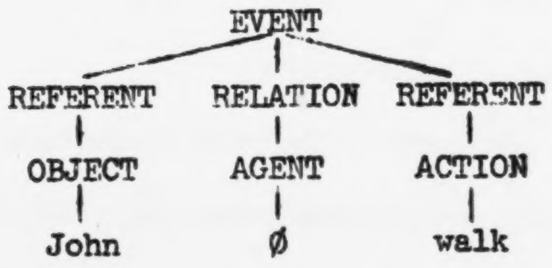
In (54) we can determine by the principles developed in this and the previous chapter that "John" is a nominal REFERENT and that "walk" is at least a verbal REFERENT. Also we know that the RELATION between these REFERENTs is that of AGENT, and that this RELATION is morphologically unmarked: ∅. Since there are no other immediately observable semantic facts (tense aside) we can state the units in morphological and categorial form: John, ∅, walk and REFERENT (OBJECT), RELATION (AGENT), REFERENT (ACTION). Combining the morphology with the category terms we get the following set:

Set 1

REFERENT	RELATION	REFERENT
OBJECT	AGENT	ACTION
John	∅	walk

Now any set containing at least two REFERENTs and one RELATION can be ordered REFERENT RELATION REFERENT and termed EVENT. What usually has to be done, then, is to determine the appropriate elements which make different sets. Since we have only the necessary and sufficient conditions for one unit set, for one EVENT, we do not have to determine appropriate sets. However, we must next determine the proper order for the categories. Does the left REFERENT in Set 1 belong in the left position or in the right position? The answer does not depend on convention except insofar as left-to-right ordering has been operationally defined. "John" "exists" prior to the ACTION "walk" and this knowledge leads to the decision to place "John" in the left position and "walk" in the right. Thus, the preceding process yields Figure 37:

Figure 37



The syntactic labeling is accomplished in the usual manner. We can state even more precisely the steps which must be taken in the analysis which we have described for this simple sentence:

1. Determine what elements, if any, have been deleted in sentence formation

2. Determine which lexical items are semantically complex

3. Determine the RELATIONs between and within lexical items according to case definitions

4. Determine the semantic category and subcategory of the simple lexical items and of the elements of complex lexical items

5. Determine the sets of semantic categories by discovering the unknowns in the following: X REFERENT is in a Y RELATION to Z REFERENT

6. Determine the order of the elements within the sets according to temporal and other priorities

7. Determine the order of the sets and the elements not yet part of the sets in order to achieve appropriate dependency relationships

8. Represent the configurations of sets according to the diagramming procedures previously set forth

9. Label the semantic categories according to syntactic conventions

Once these procedures have been applied in some order to a given sentence, the result should be a figure which can be read in a manner consistent with our intuitions of the meaning of the sentence. This reading involves usually one convention: X REFERENT is in a Y RELATION to Z REFERENT. In this statement, "X" is to be regarded usually as the left REFERENT and "Z" as the right REFERENT. The exceptions seem to be in the case of the RESULTATIVE and the RECEPTIVE, where this statement or convention would be read with "X" as the right REFERENT and "Z" as the left REFERENT.[32]

---

[32] There appears to be no explanation for this difference in the way EVENTs containing these two types of RELATIONs are read.

Let us take the slightly more complex sentence (55):

(55) The window was opened by Justin

"Justin" and "the window" are OBJECT REFERENTs, and "opened" is an ACTION REFERENT. These are the only REFERENTs which are lexically realized, though as we know there may be others which are not. Since there are no obvious unspecified REFERENTs, we shall proceed as if there were none. Should we be unable to construct a semantically well-formed structure in the process of analysis, we can take up the possibility of unspecified REFERENT(s). The RELATION of "the window" to the ACTION "opened" is REACTIVE in accordance with our definition in Chapter II. "Justin," being the name of an animate being, is related AGENTively to an as yet undetermined REFERENT. Our knowledge that "Justin" does not "open" prevents us from placing the former REFERENT in an AGENT RELATION with the latter. We do know, however, that "Justin" is prior to the ACTION "open" and that "the window" is also prior to "open." Based on this information we can form one full set and a partial set as follows:

Set 2

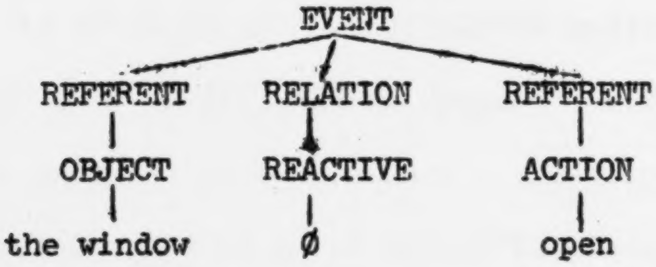
REFERENT	RELATION	REFERENT
OBJECT	REACTIVE	ACTION
the window	∅	open

Set 3

REFERENT	RELATION
OBJECT	AGENT
Justin	by

Since we know that semantically well-formed sets are EVENTs, we can cast Set 2 into diagrammatic form as Figure 38.

Figure 38


EVENT
REFERENT
RELATION
REFERENT
OBJECT
REACTIVE
ACTION
the window
∅
open

Now we must determine the completing REFERENT of Set 3. There being no other discernible units to consider, we can conclude that the EVENT of Figure 38 is the completing REFERENT which, in the previously specified order, produces Figure 39.

Figure 39

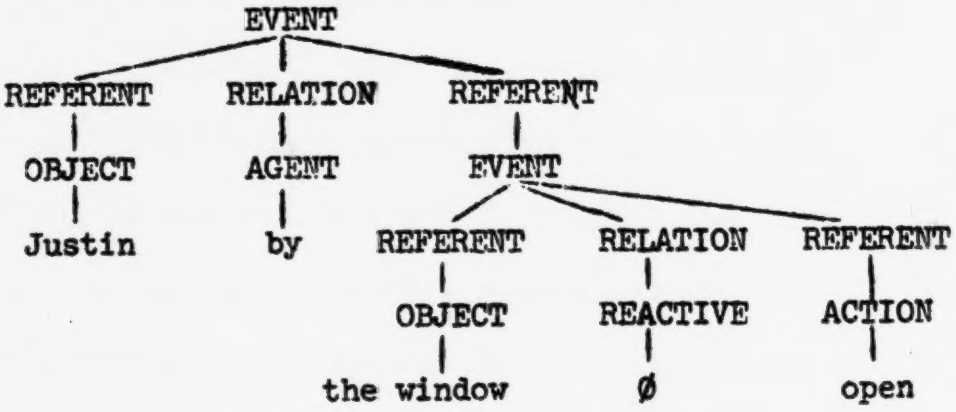

EVENT
REFERENT
RELATION
REFERENT
OBJECT
AGENT
EVENT
Justin
by
REFERENT
RELATION
REFERENT
OBJECT
REACTIVE
ACTION
the window
0
open

Figure 39 is the semantically acceptable product of the analytical procedures stated above. Since no semantic gaps exist, we have no reason to seek additional, unspecified REFERENTs or RELATIONs.

A somewhat more complicated example exists when we add a simple instrumental[33] phrase to our original (55):

(56) The window was opened with a crowbar by Justin

However, rather than detailing an analysis of this only slightly more difficult sentence, let us examine (57), which contains a sentential instrumental phrase:

---

[33] We use here lower case letters to designate the use of this term in an ordinary language fashion which is not necessarily identical with the technical use of the term, which we present in upper case letters.

(57) Justin opened the window by beating it with a crowbar

We already know certain facts about this sentence from our previous analysis of (55): "the window" is in a REACTIVE RELATION to the ACTION "open," and "Justin" is AGENTively related to some REFERENT. Nothing more can as yet be said. If we look at the sentence closely, we can see that the one who did the beating is not superficially specified though it must be "Justin." Thus we have two major subunits of the sentence, "Justin opened the window" and "Justin beat it with a crowbar." Since we know the semantic content of the first, let us turn to the second. The "it" is the pronominal form of "the window." By definition we know that "the window" is CONTACTIVEly related to "beat" and that "the window," here as before, is an OBJECT REFERENT and that "beat" is an ACTION REFERENT. Here, then, is Set 4:

Set 4

REFERENT	RELATION	REFERENT
OBJECT	CONTACTIVE	ACTION
the window	Ø	beat

The phrase "with a crowbar" contains the INSTRUMENTal RELATION signaled by "with," and the OBJECT REFERENT "a crowbar." Since "a crowbar" is INSTRUMENTal with respect to the content of Set 4, and is prior to that content, we can form Set 5 using Set 4 as the completing REFERENT of the set, REFERENT (OBJECT, "a crowbar") and RELATION (INSTRUMENT, "with").

Set 5

REFERENT	RELATION	REFERENT		
OBJECT	INSTRUMENT	EVENT		
a crowbar	with	REFERENT	RELATION	REFERENT
		OBJECT	CONTACTIVE	ACTION
		the window	∅	beat

It is further true that "Justin" is AGENTively related to some REFERENT and semantically prior to the content of Set. 5. Since we know that "Justin" has brought about the situation described in Set 5 and since we further know that this Set can itself be a REFERENT in the form of EVENT, we have the content for Set 6.

Set 6

```
REFERENT   RELATION        REFERENT
 OBJECT     AGENT             EVENT
 Justin       Ø       REFERENT  RELATION      REFERENT
                       OBJECT   INSTRUMENT      EVENT
                    a crowbar      with    REFERENT RELATION REFERENT
                                              OBJECT CONTACTIVE ACTION
                                            the window   Ø       beat
```

This Set corresponds to the meaning of the unit "Justin beat the window with a crowbar."

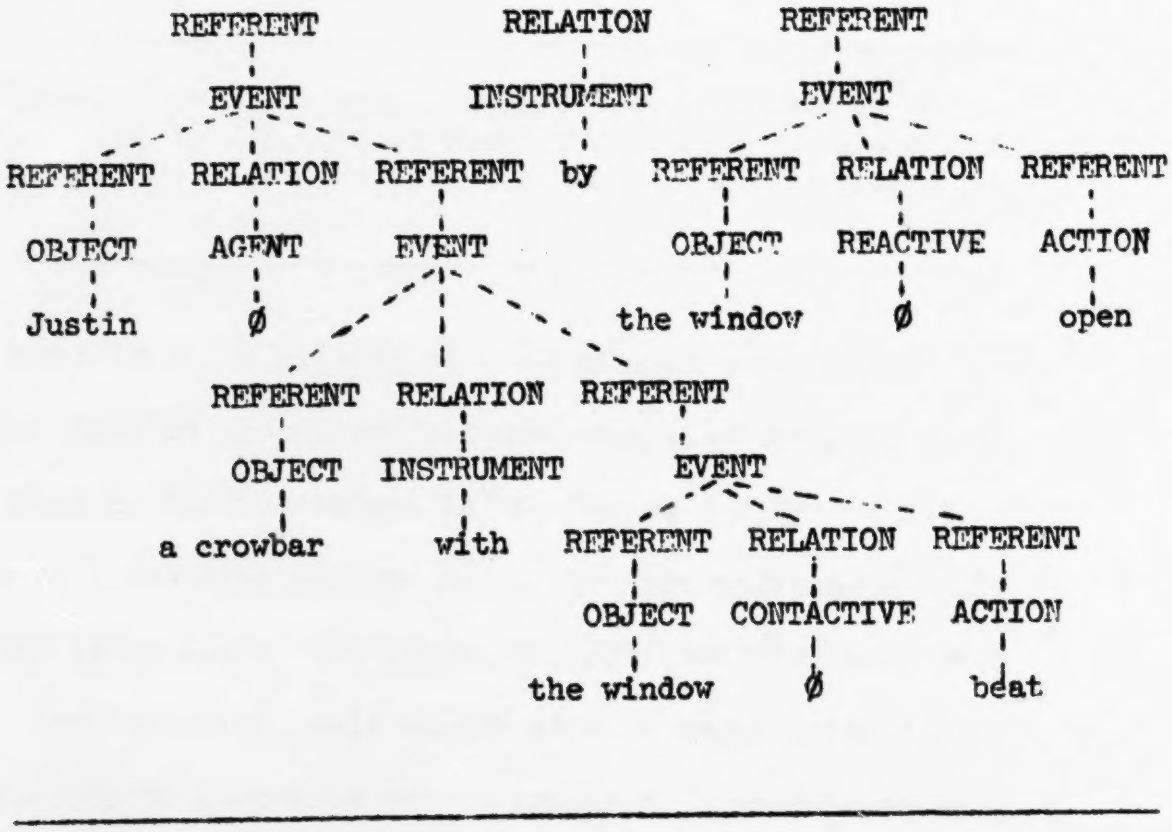
Turning to the first unit, "Justin opened the window," our first decision might be to represent this content in the same manner as Sets 2 and 3 for sentence (55), which produce ultimately Figure 39. However, before doing that, we must determine the relationship between the content of Set 6, directly above, and the rest of the sentence. We know that the "by" of (57) signals, in this case, a sentential instrument. As such, Set 6 ought to be related INSTRUMENTally to some other REFERENT, namely the REFERENT containing Set 7, because we understand that the beating of the window with a crowbar is instrumental in producing the opening of the window.

Set 7

REFERENT	RELATION	REFERENT
OBJECT	REACTIVE	ACTION
the window	Ø	open

Thus, we can construct Set 8 with the content of Set 6 to the left of the content of Set 7 because of its semantic (specifically, temporal) priority.

Set 8[34]


REFERENT
EVENT
REFERENT
OBJECT
Justin
RELATION
AGENT
Ø
REFERENT
EVENT
REFERENT
OBJECT
a crowbar
RELATION
INSTRUMENT
with
REFERENT
EVENT
REFERENT
OBJECT
the window
RELATION
CONTACTIVE
Ø
REFERENT
ACTION
beat
RELATION
INSTRUMENT
by
REFERENT
EVENT
REFERENT
OBJECT
the window
RELATION
REACTIVE
Ø
REFERENT
ACTION
open

---

[34] In order to facilitate the reading of large sets, we shall draw connecting broken lines. However, sets are not

figures and should not be confused with them since the former are tentative groupings of units which may or may not yield the latter.

The single remaining incomplete set is that containing the REFERENT "Justin" and the RELATION AGENT, which we analyzed from the unit "Justin opened the door." Since we know that "Justin" is AGENTive with respect to the remainder of the semantic content, we need only to make Set 8 a REFERENT to the right of the RELATION AGENT and "Justin" a REFERENT OBJECT to the left. This will produce the content of a figure representing the full sentence (57).[35]

Rather than illustrate this process at great length, using progressively more complex sentences, we shall attempt to fully test the principles of analysis which we have set forth by dealing with one quite complex sentence. We shall then leave the detailing of relatively less complex sentences of differing types to some future time, believing our current efforts to demonstrate the soundness of the system to be sufficient. Let us now examine (58):

---

[35] Instead of presenting a figure which would result from this analysis, we can turn back to page 133 of this chapter and examine Figure 14, which is quite similar to a figure for (57).

(58) With a look of anguish, Hanby muzzled the dog

The phrase "a look of anguish" is an interesting place to begin since it obviously involves deleted elements which we must recover. First, "anguish" is an emotional condition restricted to humans or possibly animate beings. Additionally, we interpret the sentence to mean that not the "dog" but that "Hanby" is suffering from this emotion, yet "Hanby" is not specified within the phrase. Recovering this deleted element provides us with a paraphrase: "Hanby looked anguished." We have already changed in this paraphrase the syntactic categories of the original "look" and "anguish" from nouns to verb and adjective, respectively. This change has been from the derived to the fundamental because of our discussion concerning appear (p. 141) and verbs of emotional response (cf. Chapter II). From that discussion of appear, we know that "X," in this case "Hanby's anguish," must appear to someone: "Hanby looked anguished to someone (some unspecified person)." Another paraphrase is: "some unspecified person perceived Hanby anguishing." From this latter paraphrase we can identify the appropriate semantic categories of the lexical items. "Some unspecified person" and "Hanby" are REFERENT OBJECTs and "perceive" and "anguish" are REFERENT ACTIONs. By case definition, "Hanby" is related RESPONSIVEly to "anguish"; "some unspecified person," RESPONSIVEly to "perceive"; and the unit "Hanby's anguish," PERCEPTIVEly to "some unspecified person's perception." We can determine that "Hanby's anguish" occurred prior to the perception thereof, and that something unspecified occurred prior to the "anguish" in order to have produced that condition. However, for simplification we shall not deal with the latter fact. Now we can determine the sets of semantic units within this phrase.

Set 9

REFERENT	RELATION	REFERENT
OBJECT	RESPONSIVE	ACTION
Hanby	Ø	anguish

Set 10

REFERENT	RELATION	REFERENT
	PERCEPTIVE	
	Ø	

Set 11

REFERENT	RELATION	REFERENT
OBJECT	RESPONSIVE	ACTION
some unspecified person	Ø	perceive

It is clear that Set 9 will become the left REFERENT of Set 10 and that Set 11 will become the right REFERENT of Set 10. Set 12 represents these combined sets.

Set 12

	REFERENT		RELATION		REFERENT	
	EVENT		PERCEPTIVE		EVENT	
REFERENT	RELATION	REFERENT	∅	REFERENT	RELATION	REFERENT
OBJECT	RESPONSIVE	ACTION		OBJECT	RESPONSIVE	ACTION
Hanby	∅	anguish		some unspecified person	∅	perceive

In the phrase "Hanby muzzled the dog" we need to determine the relevant facts about "muzzle." It can be a noun, syntactically, referring to some object which is placed over the mouth and jaws of an animal to prevent it from biting, eating or barking or to that part of an animal which is the mouth and jaws. In addition, as in (58), "muzzle" can be a verb which means to prevent an animal from biting, eating or barking by placing some object over its mouth and jaws, its muzzle. Clearly, all of these meanings are related, but we must determine which is fundamental and which derived so that we may appropriately analyze the underlying meaning of our sentence.

Diachronic evidence indicates that it is the nominal body part which is fundamental, and, therefore, the basis for the other meanings. Our analysis will, then, account for the derived nature of the verb "muzzle" in (58).[36] Now we can set forth a paraphrase of "Hanby muzzled the dog";"Hanby prevented the dog from barking (biting, eating) by putting some object on (over, around) its muzzle." Based on precedent (pp. 189-191), we can readily determine that "Hanby's putting something on the dog's muzzle" is an EVENTive or sentential instrument.

Further, "the dog's not barking" is a unit in which "dog" is AGENTively related to "barking." "Dog" is clearly an OBJECT REFERENT and "bark" an ACTION REFERENT. Thus we can form the first set of the unit "Hanby muzzled the dog."

Set 13[37]

REFERENT	RELATION	REFERENT
OBJECT	AGENT	ACTION
the dog	Ø	bark[38]

---

[36] Since there is apparently no way to determine synchronic derivation, it might be effective to work under the hypothesis that synchronic derivation and diachronic derivation are isomorphic, a procedure which would provide at least consistent operational validity.

Given Set 13 and our knowledge of the relationship of "Hanby's putting something on the dog's muzzle" to the content of Set 13--RELATION, INSTRUMENT--we can form Set 14.

Set 14

<table>
<tr><td>REFERENT</td><td>RELATION</td><td colspan="3">REFERENT</td></tr>
<tr><td>EVENT</td><td>INSTRUMENT</td><td colspan="3">EVENT</td></tr>
<tr><td></td><td>0</td><td>REFERENT</td><td>RELATION</td><td>REFERENT</td></tr>
<tr><td>Hanby's putting something on the dog's muzzle</td><td></td><td>OBJECT</td><td>AGENT</td><td>ACTION</td></tr>
<tr><td></td><td></td><td>the dog</td><td>0</td><td>bark</td></tr>
</table>

We can determine by definition that "Hanby" is in an AGENTive RELATION with respect to "the putting of something on the dog's muzzle," that "something" is TRANSMITTIVEly related

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[37] We are not representing the negative which is essential to the meaning of the sentence. This is not an oversight, rather the result of a decision not to develop the apparatus to deal with negation and other modalities.

[38] We have chosen to use the ACTION REFERENT "bark" arbitrarily and without any justification from the sentence in question. The more general notion of mouth functions which subsumes "barking, biting, eating" would be more appropriate. However, depending on the particularity of the ACTION, we would have to represent alternate structures; simple REFERENT, ACTION in the case of the intransitive "bark," or complex REFERENT, EVENT in the case of the transitive "bite" or "eat." Therefore, we chose the simpler "bark" over the complex "bite," "eat" or the ambiguous "mouth functions." Further context might specify the particular function and support one structure over another.

to "the putting," that "the dog's muzzle" is LOCATIVEly related to "the putting of something," and that "the dog" and "its muzzle" are related through INALIENABLE POSSESSION. Categorially, "muzzle," "something," and "Hanby" are OBJECT REFERENTs and "put" (or some general term of motion) is an ACTION REFERENT. Thus we can now form further sets, and then combine them appropriately to represent the left REFERENT of Set 14.

Set 15

REFERENT	RELATION	REFERENT
OBJECT	TRANSMITTIVE	ACTION
something	Ø	(motion)
		"put"

We know this content to be in a LOCATIVE RELATION to "the dog's muzzle" and thus we can form Set 16.

Set 16

	REFERENT		RELATION	REFERENT
	EVENT		LOCATIVE	OBJECT
REFERENT	RELATION	REFERENT	Ø	muzzle
OBJECT	TRANSMITTIVE	ACTION		
something	Ø	(motion)		
		"put"		

The problem with the content of this set is that the right REFERENT does not reflect the possessive whole-part relationship between "the dog" and "the muzzle." Thus a new set, Set 17, has the full content for the right REFERENT where only "muzzle" appears in Set 16.

Set 17

REFERENT	RELATION	REFERENT
OBJECT	INALIENABLE POSSESSION (whole-part)	OBJECT
the dog		muzzle
	Ø	

Now we may rewrite the content of Set 16 as Set 18.

Set 18

REFERENT			RELATION	REFERENT		
EVENT			LOCATIVE	EVENT (+STATE)		
REFERENT	RELATION	REFERENT	Ø	REFERENT	RELATION	REFERENT
OBJECT	TRANSMITTIVE	ACTION		OBJECT	INALIENABLE POSSESSION	OBJECT
something		(motion)		the dog		muzzle
	Ø	"put"			Ø	

We need here to discuss the RELATION LOCATIVE in Set 18. Earlier in this chapter, in dealing with transference, specifically that of "paint," we had a question whether "wall" was not RECEPTIVEly as well as LOCATIVEly related to "the putting of the paint." If transference always involves the RECEPTIVE, as it did in Figure 33 and Figure 34, for example, we might also raise the question whether possession is a part of the meaning of transference. There are sentences like "The dog has an object over its muzzle" as well as "Karl has the present." Moreover, there is "This wall has the paint on it" though there is no "*New York has the present in it." One solution to enable us to sort out relevant distinctions would be to view the RECEPTIVE as that feature which, when present, is always accompanied by the possessive and, when not present, excludes the possessive. Thus Set 18, containing no RECEPTIVE, is not accompanied by the possessive. This is intuitively satisfying since some object can be on a dog's muzzle and yet that same object may not be possessed by the dog: for example, "Hanby put Rex's chain on Spot because Spot didn't have one." The objection to this solution is that, since RECEPTIVE and some form of possession would be inseparable, the former would be redundant in just those situations where transference was present.

An alternate solution which also agrees with our intuitions can be stated as follows: any act of transference requires the presence of the RECEPTIVE, which may be followed by either ALIENABLE POSSESSION or LOCATIVE. In this case, Set 18 would be rewritten to contain a RECEPTIVE RELATION to be followed by a LOCATIVE. We discussed ALIENABLE POSSESSION in Chapter II and suggested that there might be two types: LOCATIVE, typically inanimate, and PERSONAL, typically animate. Most sentences of the form "X is LOCATIVE Y" have counterparts of the form "Y has X LOCATIVE it (Y)" (cf. sentences (319)-(330) pp. 104-105, Chapter II). The question to ask is whether LOCATIVE POSSESSION, as we have tentatively hypothesized it, is really a form of POSSESSION at all or rather simply a LOCATIVE which is superficially transformed into a pseudo-possessive. The answer may reside in the various meanings of the term possession, all of which, with the exception of whole-part, involve the common feature of control: legal, physical, mental and so forth. We would have to greatly extend the notion of control in order to account for some type of locational object relationship. The unnaturalness of such theoretical metaphorizing appears to support the pseudo-possessive alternative. Additionally, for whatever theoretical relevance it might have to our discussion, we can cite Fillmore's account of be and have suppletion in conjunction with locatives, which indicates that the have of sentences of the type we have been questioning is not the have which denotes possession. Let us then claim that LOCATIVE POSSESSION is not POSSESSION, and that ALIENABLE POSSESSION requires an animate possessor, an OBJECT capable of exercising some form of control over the possessed. What this means for our previous analyses of sentences illustrating transference is this: Figure 21, page 147, and Figure 33, page 173 will have to be changed to show the RECEPTIVE followed by LOCATIVE, while Figures 34-36 will remain as they are with the RECEPTIVE followed by some form of POSSESSION. In the analysis of (58), Set 18 will have to be changed by removing LOCATIVE and replacing it with RECEPTIVE; also, Set 18 (now Set 19) will have to be appropriately related to some new set, Set 20, which contains the LOCATIVE. The details of this new set and the completion of the analysis of (58) will follow our presentation of the revisions of Figures 21 and 33: 40 and 41, respectively.[39]

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[39] In addition to simply presenting the revised figures we will need to justify the additional structure since it cannot be shown without proper integration.

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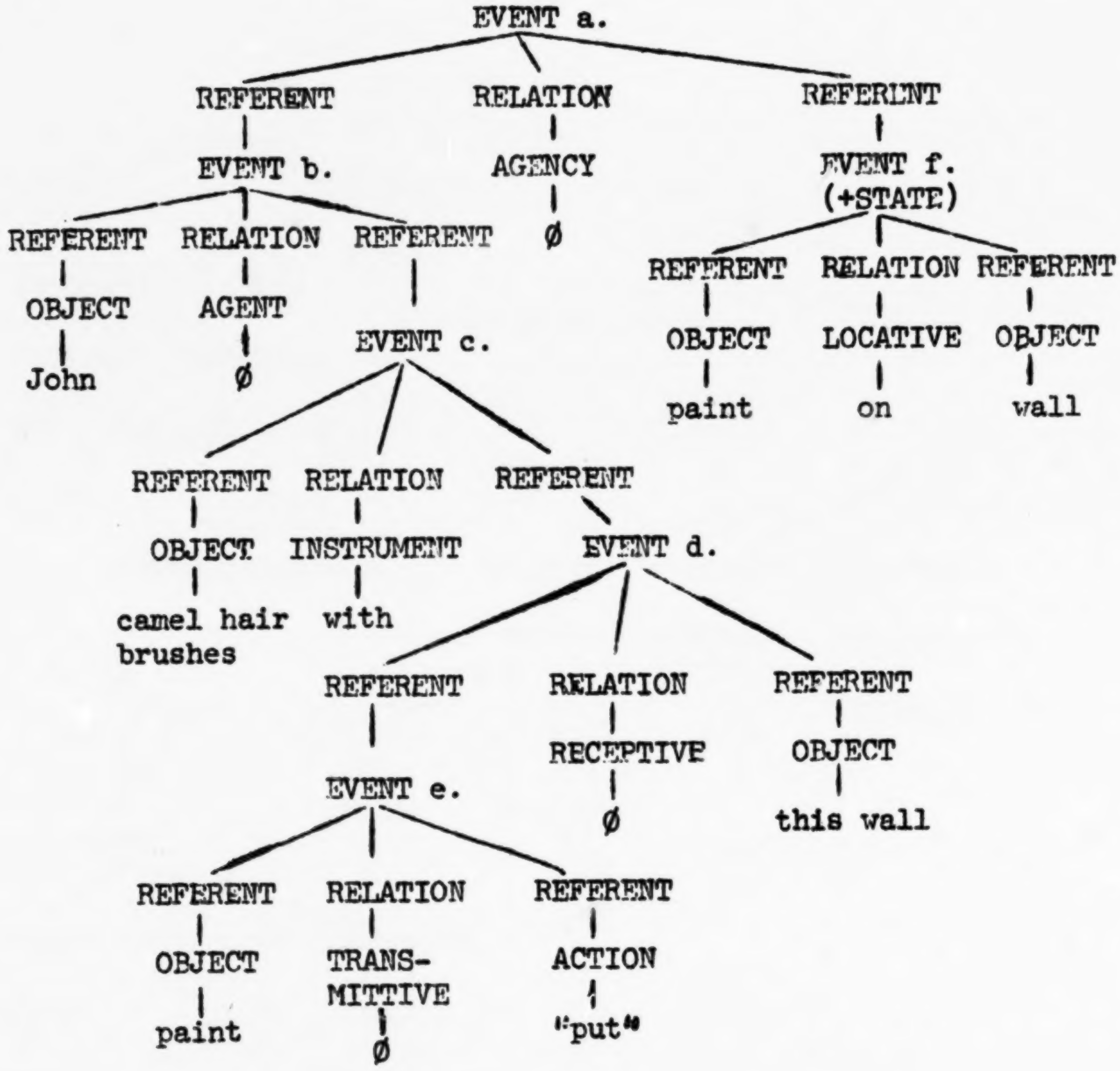
(33) John painted this wall with camel hair brushes

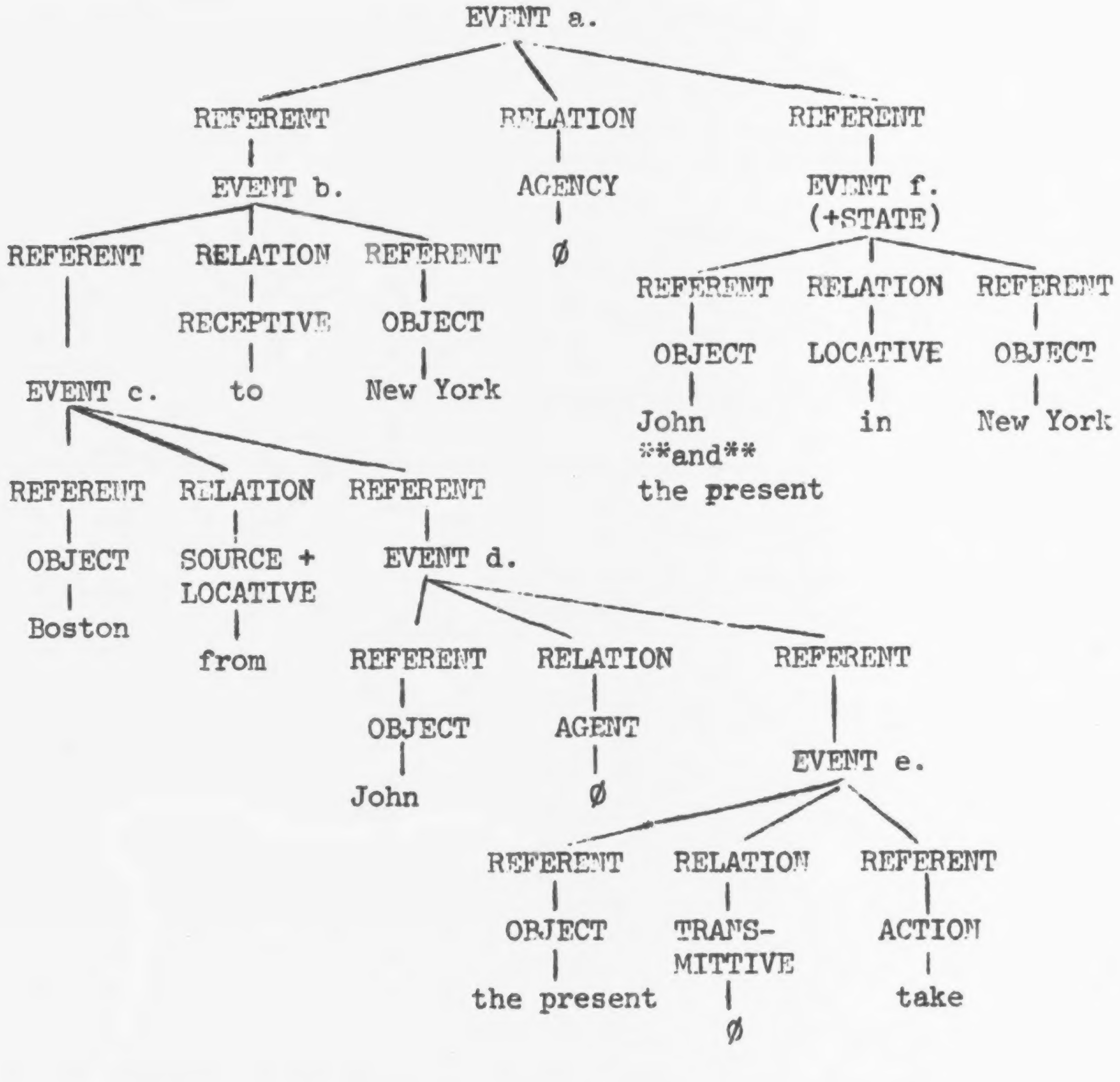
Figure 40


EVENT a.
REFERENT
RELATION
REFERENT
EVENT b.
AGENCY
Ø
EVENT f.
(+STATE)
REFERENT
RELATION
REFERENT
OBJECT
AGENT
John
Ø
EVENT c.
REFERENT
RELATION
REFERENT
OBJECT
LOCATIVE
OBJECT
paint
on
wall
REFERENT
RELATION
REFERENT
OBJECT
INSTRUMENT
camel hair brushes
with
EVENT d.
REFERENT
RELATION
REFERENT
RECEPTIVE
OBJECT
Ø
this wall
EVENT e.
REFERENT
RELATION
REFERENT
OBJECT
TRANS-MITTIVE
ACTION
paint
Ø
"put"

The only additional structure required for Figure 40 is the connection between EVENT b. and f. This AGENCY RELATION is modeled on the comparable structure of Figure 34 and 35 (pp. 175, 178). In other words, EVENT b. produces EVENT f., which is +STATE in accordance with two OBJECTs as REFERENTs.

(51) John took the present from Boston to New
York.

Figure 41


EVENT a.
REFERENT
RELATION
REFERENT
EVENT b.
AGENCY
Ø
EVENT f.
(+STATE)
REFERENT
RELATION
REFERENT
REFERENT
RELATION
REFERENT
RECEPTIVE
OBJECT
OBJECT
LOCATIVE
OBJECT
EVENT c.
to
New York
John
and
the present
in
New York
REFERENT
RELATION
REFERENT
OBJECT
SOURCE +
LOCATIVE
EVENT d.
Boston
from
REFERENT
RELATION
REFERENT
OBJECT
AGENT
John
Ø
EVENT e.
REFERENT
RELATION
REFERENT
OBJECT
TRANS-
MITTIVE
ACTION
the present
Ø
take

The only interesting difference between Figure 40 and 41 which reveals something new is the content of EVENT f. Here for the first time we have a compound REFERENT, "John and the present." The reason for this analysis as opposed to one which would place the content of EVENT d. as the left REFERENT of EVENT f. is that the meaning of the sentence is not that some activity or event occurred in New York, rather that as a result of some activity or event, two physical objects--"John and the present"--were in New York, precisely the meaning captured in Figure 41.[40]

Now we may return to complete our analysis of (58).

(58) With a look of anguish, Hanby muzzled the dog

We pointed out as a result of the discussion of the RECEPTIVE, LOCATIVE, and POSSESSION that Set 18 would have to be rewritten as Set 19, containing, not a LOCATIVE, but a RECEPTIVE.

Set 19

	REFERENT		RELATION		REFERENT	
	EVENT		RECEPTIVE		EVENT (+STATE)	
REFERENT	RELATION	REFERENT	Ø	REFERENT	RELATION	REFERENT
OBJECT	TRANSMITTIVE	ACTION		OBJECT	INALIENABLE POSSESSION	OBJECT
something	Ø	(motion) "put"		the dog	Ø	muzzle

---

[40] Recall that lower case letters in the case of event represent the natural language use of the term, not the theoretical use.

We can continue to build using Set 19 as a base. We know, as we said earlier, that "Hanby" is related AGENTively to "the putting of something on the dog's muzzle." Thus, we can create Set 20 using Set 19 as right REFERENT, "Hanby" as left REFERENT, and AGENT as RELATION.

Set 20

REFERENT	RELATION	RELATION
Hanby	AGENT	EVENT
	∅	Set 19[41]

---

[41] We shall omit the full restatement of Set 19 to simplify the presentation of Set 20.

Based on our recent discussion, we know that the content of Set 20 forms a left REFERENT which is related by AGENCY to a right REFERENT containing the LOCATIVEly related OBJECTs, "something" and "the dog's muzzle." This right REFERENT is shown in Set 21 below.

Set 21

REFERENT	RELATION	REFERENT
OBJECT	LOCATIVE	EVENT (+STATE)
something	0 e.g. on	

REFERENT	RELATION	REFERENT
OBJECT	INALIENABLE POSSESSION (whole-part)	OBJECT
the dog	0	muzzle

Then, some set, for example, Set 22, contains the appropriately related content of Sets 20 and 21[42] Returning to Set 13, we can see that its content is the result of the content of Set 22 and therefore, these two sets must be related by INSTRUMENT, Set 22 being prior to Set 13 and therefore to its left. This complete unit has already been represented as Set 14, and explored (cf. p. 189). One final fact leads us to the completion of Hanby muzzled the dog." That fact is that "Hanby" is related AGENTively to the entire content of Set 14. The entire sentence (58) is completely analyzed with the observation that the two major units--"a look of anguish" and "Hanby muzzled the dog"---are related by "with," here the superficial signal for the COMITATIVE. Finally, after much arduous dissection, we can represent the content of Set 12 (p. 194) related COMITATIVEly to the content of Set 14 (with the above stated addition of "Hanby" and AGENTive RELATION) in Figure 42 below.[43]

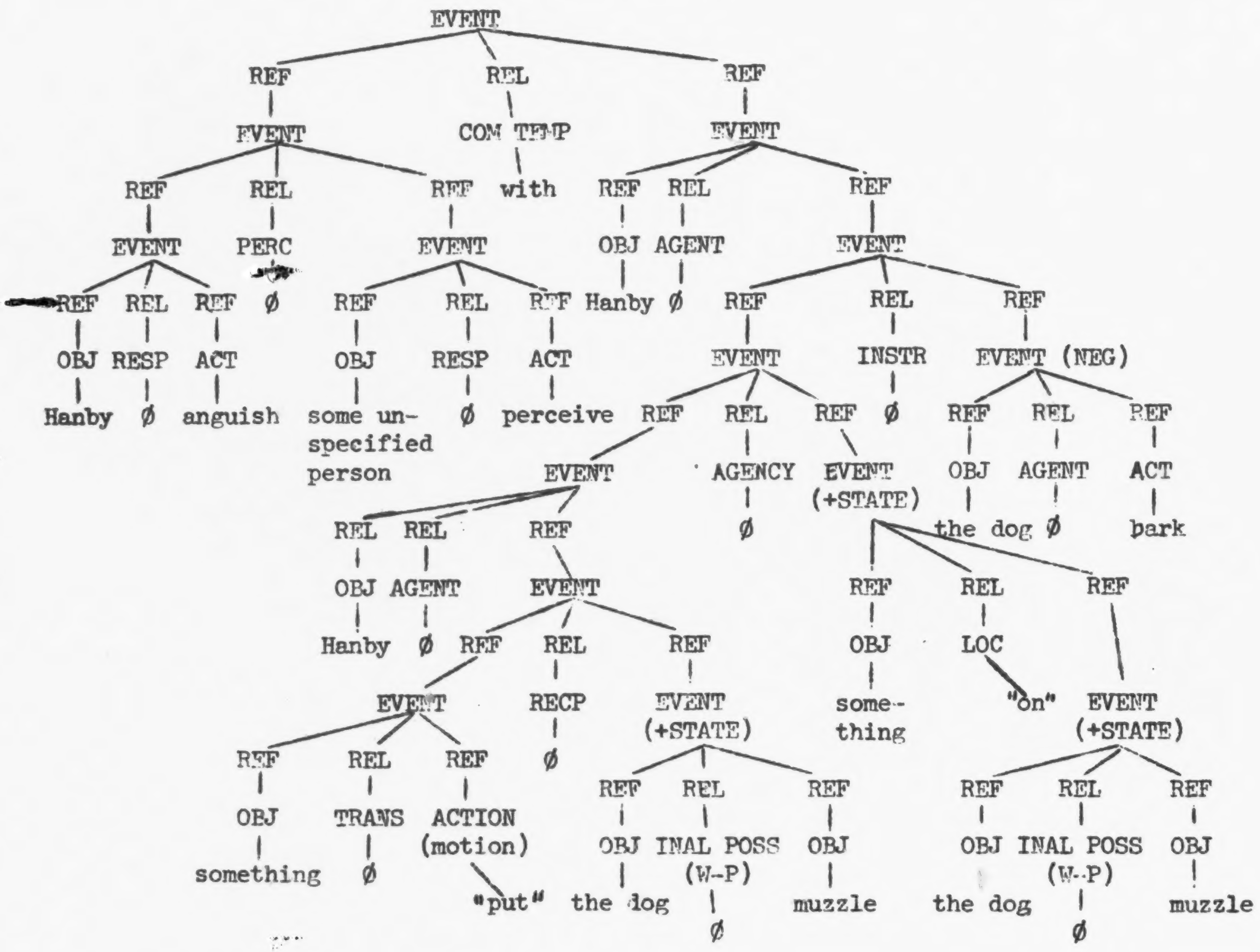
---

[42] Again, for simplification, we shall not present the statement of Set 22.

---

[43] Because of space limitations, the following abbreviations have been used in this figure: REF: REFERENT; REL: RELATION; PERC: PERCEPTIVE; RESP: RESPONSIVE; COM TEMP: COMITATIVE-TEMPORAL; OBJ: OBJECT; INSTR: INSTRUMENT; LOC: LOCATIVE; TRANS: TRANSMITTIVE; INAL POSS: INALIENABLE POSSESSION, w-p: whole-part; ACT: ACTION · REC: RECEPTIVE.

Figure 42


EVENT
REF
REL
REF
EVENT
COM TEMP
EVENT
REF
REL
REF
with
REF
REL
REF
EVENT
PERC
EVENT
OBJ
AGENT
EVENT
REF
REL
REF
Ø
REF
REL
REF
Hanby
Ø
REF
REL
REF
OBJ
RESP
ACT
OBJ
RESP
ACT
EVENT
INSTR
EVENT (NEG)
Hanby
Ø
anguish
some un-specified person
Ø
perceive
REF
REL
REF
Ø
REF
REL
REF
EVENT
AGENCY
EVENT (+STATE)
OBJ
AGENT
ACT
REL
REL
REF
Ø
the dog
Ø
bark
OBJ
AGENT
EVENT
REF
REL
REF
Hanby
Ø
REF
REL
REF
OBJ
LOC
EVENT
RECP
EVENT (+STATE)
some-thing
"on"
EVENT (+STATE)
REF
REL
REF
Ø
REF
REL
REF
REF
REL
REF
OBJ
TRANS
ACTION (motion)
OBJ
INAL POSS (W-P)
OBJ
OBJ
INAL POSS (W-P)
OBJ
something
Ø
"put"
the dog
Ø
muzzle
the dog
Ø
muzzle

IV LINGUISTIC ANALYSIS AND IMAGINATIVE LANGUAGE

> First, we may say that a poem is a structure of meanings, Words have meanings. Images have meanings. Events have meanings. Ideas have meanings. Even rhyme and meter, in a somewhat different sense, may be said to have meaning. All these things may enter into the structure we call the poem.
>
> But, and here we take up a second notion, the poem is not only a structure of meanings. It is a structure with meaning—a new meaning not to be equated with any or all of the meanings that went into the structure. The whole is greater than the sum of its parts.[1]

Many scholars of literature and some philosophers of art maintain that imaginative language differs from informative language in basic ways. Such differences, they say, must be recognized by teacher and student so that both may acquire those reading skills which are appropriate for the language of the poet. Northrop Frye writes:

> Many people grow up without really understanding the difference between imaginative and discursive writing. On the rare occasions when they encounter poems, or even pictures, they treat them exactly

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[1] "Formula for a Poem," Saturday Review, March 22, 1958. (Quoted from an address by Robert Penn Warren accepting the National Book Award for his collection of poems entitled "Promises.")

> as though they were intended to be pieces of more or less disguised information.[2]

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[2] Northrop Frye, The Educated Imagination (Bloomington: Indiana University Press, 1964), p. 116.

In fact, however, poets write in a language resembling in most important aspects the language of informative writing: the syntax and morphology are rarely so deviant as to be uninterpretable by one whose model of language is formally and functionally informative. What we need to recognize is that, while non-discursive language is not relatable in function to discursive language, it is very much relatable in semantic form and content. The very fact that an uninitiated but literate reader can make a reasonable determination of the meaning of a line of poetry or prose illustrates the dependency of the writer on the rules of ordinary language. Even the metaphors of the poet are often naturally understandable by the ordinary reader who frequently resorts unconsciously to such usages himself. As Mortimer Adler says:

> The two arts of reading penetrate and support each other. We seldom do one sort of reading without having to do a little of the other at the same time.[3]

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[3] Mortimer Adler, How To Read a Book: The Art of Getting a Liberal Education (New York: Simon and Schuster, 1963), p. 134.

Our primary concern here is not to discuss the function of imaginative language, more the task for the literary critic or philosopher, but rather to demonstrate how much can be revealed about the meaning of imaginative language through the type of linguistic analysis outlined in Chapters II and III. While we may incidentally provide the basis for certain tentative but general observations of the nature of poetic language, we will limit ourselves to our purpose of examining particular instances of poetic language in the light of the aforementioned approach. We will make no claims of exhaustiveness in our literary analysis since we have excluded such topics as phonological analysis and allusion from our investigation. In the area of syntax and semantics, we will compare the results of the limited linguistic analysis set forth in this paper with the results of the informal, "gifted reader's" approach typically found in the writings of literary critics. Such a comparison is not to determine whether the former can supplant the latter, but rather to determine whether such semantic analysis can complement and clarify certain aspects of trained, intuitive reading. While we will not engage in the highly formal and detailed procedures outlined in the latter part of Chapter III, since this method would be overly cumbersome, and extremely artificial (no one would use such techniques in dealing with lengthy and complicated examples of language), we could use these procedures if any interpretative problem arose.

Let us examine, then, a short poem in its totality to see what is happening linguistically within a literary art object.

> A shadow is floating through the moonlight.
> Its wings don't make a sound.
> Its claws are long, its beak is bright.
> Its eyes try all the corners of the night.
>
> It calls and calls: all the air swells and heaves
> And washes up and down like water.
> The ear that listens to the owl believes
> In death. The bat beneath the eaves,
>
> The mouse beside the stone are still as death--
> The owl's air washes them like water.
> The owl goes back and forth inside the night,
> And the night holds its breath.[4]

The first line presents us with two anomalies: shadows do not float and nothing can float through moonlight. The first anomaly is ambiguous: we can either interpret it as an example of metonymic substitution of effect for cause wherein "shadow" refers to the shadow which the owl makes on the ground, or of appearance for substance wherein "shadow" refers to the appearance of the owl in the air. In either case it is the owl which is floating, though this is not the image which is presented, for the owl has not yet been mentioned. In the case of the second anomaly, "moonlight" is in a way concretized since objects can only "float" through fluid (liquid or gas). Thus, the moonlight has apparent substance created by the verb float and the sentence in question. This process is certainly reinforced by the former metonymy whose effect is also to substantivize "shadow" by predicating of it that it "is floating." We could add for critical purposes that the substantivization of "moonlight" is perceptually justified since it appears to be more tangible than air. Now let us turn to a discussion of this line in terms of case and semantic structure.

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[4] Randall Jarrell, *The Bat-Poet* (New York: The Macmillan Company, 1967).

A few facts of the meaning which we must account for are the motion of the owl, the motion of the shadow, the owl's presence in the moonlight, and the moonlight's causing the shadow. We can say that the owl AGENTively floats and that this EVENT occurs LOCATIVEly "in" the moonlight. In addition, this entire EVENT--the owl's floating in the moonlight--is the AGENCY of the further EVENT, the shadow's moving, where "shadow" is REACTIVEly related to the motion. The other reading, in which "shadow" refers to "owl," again involves the owl floating in the moonlight, but instead of casting a shadow, appearing to someone to be a shadow. Thus the paraphrase:

the owl which appears to someone to be a shadow is floating in the moonlight. The fluidity of the moonlight seems to be a product of a perception such as: the owl is moving through the moonlight which appears to be a fluid. The main observations about this line, therefore, are the suppressed AGENTive REFERENT "owl," the metonymic replacement of the effect or appearance "shadow" REACTIVEly in motion, and the apparent fluid-like quality of "moonlight" created by the motion-in-fluid meaning of "float."

Line 2 presents two problems: shadows do not have wings and wings cannot make sounds. The apparent pronominalization of "a shadow" in Line 1 ("Its" wings) must be a pronominalization of the suppressed AGENTive "owl" though the apparent semantic and visual image is of a shadow with wings. The second problem is resolved as soon as we realize that Line 2, like Line 1, has a suppressed AGENTive "owl," for it would have to be the owl which is not making a sound with its wings. Thus, "wings," the part or INALIENABLEly POSSESSED, synecdochically represents the owl as well as designating that part which is INSTRUMENTal in the negated making of a sound.

Line 3 is interesting because it lacks the synecdoche or metonymy we have come to expect: "the claws" are only "long," "the beak" only "bright." This expectation is further reinforced by the return to synecdoche in Line 4: "eyes" as

INSTRUMENT of the covert "looking." While this unfulfilled expectation of Line 3 is not grammatically explainable, it is precisely the semantic analysis which reveals the abrupt incompleteness, which in turn leads us to note the suspenseful potential for death in "claws" and "beak."

Line 4, aside from the suppressed AGENTive "owl" and the synecdochic "eyes," contains the unexpected verb "try" in place of the more usual "peer into" or "look into" and the somewhat odd LOCATIVE part-whole, "corners of the night." The combination of "try" with the concretized "corners of the night" suggests a physical rather than perceptual act. If one is looking for something, someone might say, "Try under the couch," or "Try the desk." Thus, "eyes" creates the visual aspect of the act, "try" the purposive, and "corners" creates the concrete, room-like aspect of "night," which is otherwise temporal. "Corners" also imposes the meaning of closed boundaries, adding by association to the feeling of the owl's inescapableness. We might, then, postulate two underlying structures: "the owl goes everywhere to find prey" and "the owl looks (with its eyes) everywhere to find prey." These two meanings are combined in the line to form a totality of meaning: visual search, motion, exhaustiveness. By bringing together a LOCATIVE of limits ("corners") with the temporal unit "night," the poet creates an image both of a closed space and an exhaustive duration: everywhere and all night.

Line 5 does not contain a reference to any part of the owl, but rather to the owl as a whole as in Line 1. Here we have the first superficial presence of the AGENTive REFERENT required by the verb "call" and signaled by the subject pronoun "it." Yet the pronominalization is still apparently of "a shadow" from Line 1, which continues to obscure the identity of the owl. The rest of Line 5 and Line 6 presents the manifestation of the owl's calling, perhaps calling-in-motion. It is here that the air's reaction is water-like: "swelling," "heaving," "washing"; it is here that the fluidity in the image of Line 1 is further developed. This development is also somewhat of a change for the peaceful "floating," which would not be expected to disturb the fluid, has become "calls," which produce a storm-like effect (reaction) in the fluid. We know that certain elements have been deleted in the formation of Line 6 since the prepositions "up" and "down" in conjunction with "wash" are at least ambiguously transitive: "wash up and down X." Thus, the room-like quality of "night" created in Line 4 becomes a possible "X." The underlying meaning might, then, be: "wash up and down the edges (or walls) of the night." Of course another possible "X" is given overtly in Line 10: the bat and mouse.

The synecdoche of Line 7 is like that of Lines 2 and 4 in that the part, the INALIENABLE POSSESSED, as an INSTRUMENT is linked to activities superficially as though it were AGENTively related to them. In addition, Line 7 links the part with an activity whose meaning is the function of that part: listening is the function of the ear. It does not require an imposition of meaning on the activity by the nature of the REFERENT as does Line 4 where "eyes" impose a particular reading on the general verb "try." It is interesting to notice that the animal (or person) whose ear is referred to is not identifiable at this point in the poem. Even later in the poem we cannot be sure that "the ear" refers singly to a part of the mouse or the bat or, perhaps, even the poet. This uncertainty, based on grammatical fact, permits the line to mean any ear, probably the ear of any animal which the owl preys on (or of the poet who imagines the felt-experience of the animal).

We know that it is not literally the ear which believes, but rather the animal which possesses the ear; however, the reading "some animal believes in death," is superficially odd and indeed is not synonymous with the original line. It seems to be that the ear's hearing of the owl is the cause of the animal's belief in death. This interpretation reveals why the synecdoche of the ear is crucial to the meaning: the ear is at once the INSTRUMENT by which the animal hears or listens to the owl and the means, perhaps INSTRUMENT, by which the owl makes the animal believe in death. Another interpretation of this line is that the animal's belief in death makes him listen to the owl. But these readings are not mutually exclusive; on the contrary, they both contribute simultaneously to the total image: the sound, call, of the owl makes the animal believe in death and that belief makes the animal listen. The owl is ambiguously the AGENT and the PERCEPTIVE; the animal is ambiguously the RESPONSIVE or AGENT in believing and AGENT or RESPONSIVE in listening: he believes because he listens and he listens because he believes.

Lines 8 and 9 contain an elided comparative: "still as death (is still)." First, we know that in no literal way can death be still, though dead creatures are still. Thus, the meaning of this phrase: the bat and mouse are as still as if they were dead (ironically, because if they were not, they would become so).

Line 10 presents somewhat of a problem because of the multiple ambiguity of the genitive "owl's air." There are two interpretations which come easily to mind: "the owl makes the air move," and "the owl owns the air." The first meaning involves the deletion, or suppression, of the verb *move* or some other verb of REACTIVE motion and of the AGENT or AGENCY RELATION: both are certainly possible. The second meaning presents some difficulty since we know that neither people nor animals "own" air. Yet if we return to our discussion of INALIENABLE POSSESSION in Chapter II, we recall that our definition involved simply some form of control exerted over the POSSESSED by the POSSESSOR. It is obvious that once again we have a metaphorical meaning, for it is true in a sense that the owl controls the air: it is his domain. Moreover, the owl not only controls the air but all the creatures in it. This latter observation suggests that we may have another case of metonymy in which "air" represents the creatures of the night. These three interpretations of the genitive "owl's air" combine to support and enhance the image of the poem, therefore.

We might mention incidentally that the simile--"like water"--is a further development of the fluid image begun in Line 1. "Like water" is not the same type of construction as "as death" in Line 9, for we said that the latter was a reduced form of "as death is still" while we have to conclude that the former cannot be a reduced form of "like water washes them." The difference seems to be that between a simile derived from a comparative and one derived from an appositive: "the air, like water, washes them." An alternative account of "like water" might be that it is derived from a comparative containing a modal: "like water would wash them."[5]

Line 11 has two interesting features: the pro-verb of motion, "goes," and the continuing of the night-as-container image by the phrase "inside the night." The pro-verb "go" with its lack of semantic specification beyond motion permits the previously developed image of motion-in-fluid to persist. The phrase "inside the night," as a sentential locative, reinforces the earlier meaning of the duration of the act as well as its location.

Line 12 introduces a new image of night as the AGENTive REFERENT of "holds its breath" (since the pronoun must refer to "night" and not "owl"). Because "night" has in all previous contexts been imagized as container, we might conclude that this new and unprecedented metaphor is not organically appropriate. Yet there is a further interpretation in which "night" has become the metonymic counterpart of the creatures of the night: the bat and mouse in particular. We might say that the substitution is, on the basis of the previous image of "night," container for contained. Thus, the underlying structure is doubly complex: "the creatures in (of) the night hold their breaths," where "night" is again a temporal container. We could still object to the conflict of images, though we now realize that the conflict is only paradox. We can make such observations because we know, for example, that "hold its breath" is an action which requires a RESPONSIVE subject and that the only REFERENTs which qualify in the poem are the owl, the bat, and the mouse (or perhaps some other unspecified night creatures). Since the owl is typically found in AGENTive RELATIONs and the bat and mouse in RESPONSIVE ones, we are led to "try" mouse and bat. There are other reasons outside the scope of the present investigation which are more cogent: for example, we know that holding one's breath is often a fear reaction and that the bat and mouse are logically candidates for fear. In addition, the precedent of "night" as container leads us to the possible metonymy.

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[5] The general significance of these observations is not clear at this time.

Another interesting phenomenon in this poem is the "and" of Line 12. While the word and usually suggests simple EVENT or REFERENT conjunction, the content of the EVENTs which precede and follow this particular "and" causes us to consider it further. We know, for example, that Line 11 contains the AGENTive action of the owl and Line 12 the

RESPONSIVE action of the bat and mouse. We know too that the latter requires a semantically prior EVENT, AGENCY. What this "and" would seem then to signify is a potential AGENCY RELATION, indicating that it is precisely the owl's going back and forth in the night which produces the response we have seen: the bat and mouse holding their breaths.

One final point we shall make concerning this poem is not peculiar to the poem itself, but is rather a more general manifestation of the language. The phrase "hold one's breath" seems to mean something like: "to not breathe." Yet on closer examination, this paraphrase does not capture two aspects which are important to the meaning of the original phrase: the idea of holding and the idea that the not breathing occurs at the end of the inspiration cycle: the air is breathed in and held. The paraphrase "hold the air in oneself which one has breathed in" is, then, more accurate. The noun "breath" would seem to be derived from the fundamental ACTION in the EVENT, "X breathes air." Some OBJECT, the "X," is AGENTively related to "hold" and "breathe," and "air" is LOCATIVEly related to that same OBJECT, the "X." The genitive "one's breath" is actually a pseudo-possessive, specifically a LOCATIVE.[6] Figure 43 represents this interesting semantic structure.

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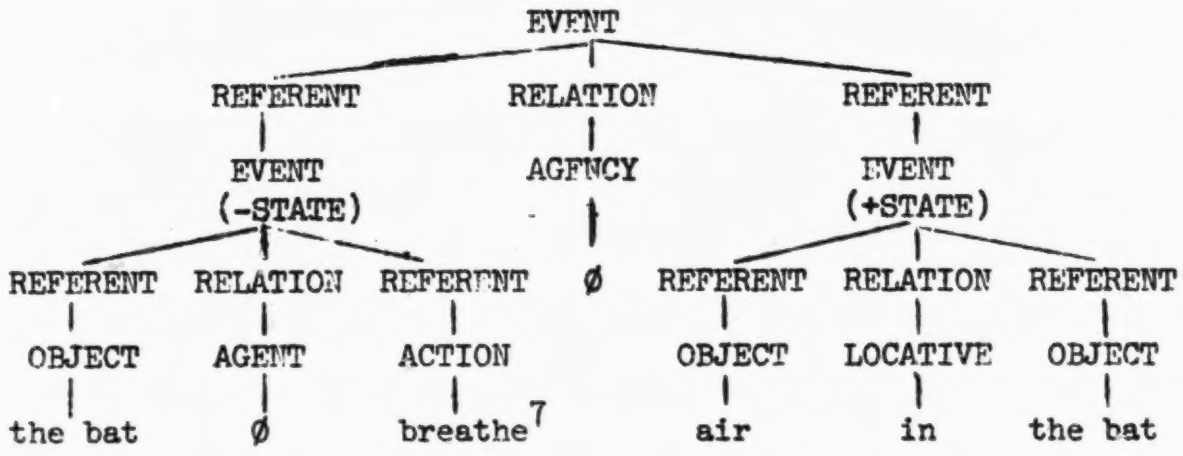
[6] But see Chapter II, pp. 104-105.

Figure 43


EVENT
REFERENT
RELATION
REFERENT
EVENT
(-STATE)
AGENCY
EVENT
(+STATE)
REFERENT
RELATION
REFERENT
Ø
REFERENT
RELATION
REFERENT
OBJECT
AGENT
ACTION
OBJECT
LOCATIVE
OBJECT
the bat
Ø
breathe 7
air
in
the bat

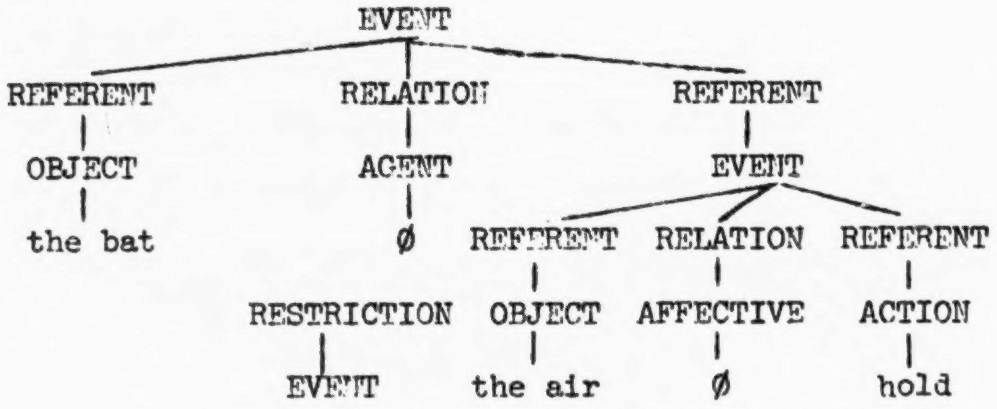
Here we have the structure of "the bat breathed in the air."

The content of Figure 43 would be the embedded relative clause on "air" in Figure 44 to represent the structure of "the bat held his breath."

---

[7] Technically, "breathe" is a complex lexical item which means something like: "do X which results in air being inspired or expired." As such it does not belong as a simple ACTION in the structure. We have placed it there for presentational simplicity.

Figure 44


EVENT
REFERENT
RELATION
REFERENT
OBJECT
AGENT
EVENT
the bat
Ø
REFERENT
RELATION
REFERENT
RESTRICTION
OBJECT
AFFECTIVE
ACTION
EVENT
the air
Ø
hold

Now let us turn to a few lines from T. S. Eliot's poem "The Wasteland,"[8]

> April is the cruelest month, breeding

These lines are fascinating because in them is Eliot's theme of the interrelationships--really organic unity--of plant, animal, man. But let us see what our semantic analysis can provide in the way of an understanding of the meaning of these lines.

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[8] T. S. Eliot, "The Wasteland," in T. S. Eliot: The Complete Poems and Plays (New York: Harcourt, Brace and World, Inc., 1952).

In the first phrase, "April is the cruelest month," it is odd that a time, "April," is said to be cruel. We think of people or animals being cruel but not times. The interpretation we might first obtain is that what happens in April is cruel. Yet it even seems odd that events or occurrences are cruel. When we think of the meaning of cruel--"X makes some animate being suffer"--we accept the semantic perception of events making creatures suffer. However, the generalized form of this meaning would intuitively appear to require some form of AGENT. Since we have no additional reason at this point in the poem to pursue the AGENT presence, we shall tentatively conclude that "April" is the metonymic replacement for some event or events which occur during that time: metonymy of time for events. A second observation which has already been implicitly made about this phrase is that the verbal term "cruel" requires an object: "cruel to Y." The "Y," which must be animate and must be able to experience cruelty, is obviously suppressed a condition whose only recognizable effect at this point in the poem is to make the identity of the sufferer unknown and ambiguous. We should note the superlative, though we have nothing to say about it at the moment. We can provide a semantically well-formed paraphrase of this phrase based on our discussion: "some unspecified OBJECT(s) or EVENT(s) in April make some unspecified animate(s) suffer most." One critical observation we might make at this time is that the reader's task is to search, as he continues to read, for the semantic content of the unspecified elements in the first phrase just as he searched for the identity of the owl in Jarrell's poem.

What are we to make of the participial phrase "breeding lilacs out of the dead land"? We must deal with this phrase in terms of its semantic link to the rest of the sentence, specifically to the first phrase, and in terms of its internal characteristics. Beginning with the former, we can ask whether the phrase is simply linked in a story-like manner to the previous one or whether there is a more definite semantic link. We might hypothesize, for example, that the second phrase is an exemplification of the first, that the cruelty is exemplified by the breeding of lilacs out of the dead land; or, stated in another way, one would judge that "X" is cruel because of the breeding of lilacs out of the dead land. If we recall that "X" could be events, we might well conclude that the second phrase represents one of the events which are cruel. On the other hand, if "X" is an AGENT, we might conclude that the breeding of lilacs out of the dead land is the means by which that AGENT brings about suffering. These ambiguities are certainly not now resolvable. Perhaps one result of our analysis of the internal features of the phrase will provide some clue to these questions.

The overt subject of the participial "breeding" is "April," but here again we know that a unit of time cannot engage in the physical act of breeding and must, therefore, be metonymic for something else. In addition, we see that it is "lilacs" which are bred out of the dead land. Since we know that breed requires some type of animal or human as progeny and as source, neither lilacs nor land are acceptable literally. But we are left without any plausible alternative, without any underlying matching meaning. We can, at this point, only observe that "lilacs" and "land," as well as "April," are animalized by the semantic requirements of the verb breed. Turning further within the phrase, we find that "dead land" is anomalous in that the land, being inanimate, can be neither dead nor alive. Clearly we have another case of metonymy: the substitution of the location and/or source for the object and/or product, the land for those things---plants/animals--which live in and on it. We can provide a semantic paraphrase for the phrase "dead land" in this form: "the land in which (on which) plants/animals are not alive." In keeping with our determination of the requirements of "breed," we can state the meaning as: "X causes Y to give birth to Z," where the co-occurrents are semantically specifiable as follows: X is AGENT, Y is RESPONSIVE+ SOURCE, and Z is RESULTATIVE. Yet "give birth" must mean more than "create" since the RESULTATIVE is living. We might say that the object created is an EVENT: "Z lives." Thus, the full statement of the meaning and co-occurrents of "breed" would be: "X causes Y to cause Z to live," where "give birth" is the component: "Y causes Z to live."

The ambiguous--or should we say unambiguous--animal/ plant reference of the first participial phrase is followed by a clearly animal/human reference in the second occurrence of cruelty: "mixing memory and desire." Again it is some unspecified OBJECT(EVENT) metonymized by "April" which is the AGENT(AGENCY) of "mixing." Overtly, "memory and desire" are related REACTIVEly to the ACTION "mixing" though we know that some animal/human must be experiencing these emotions. Another layer of meaning is thus exposed: the animal/human is responding to some unspecified EVENT by remembering and desiring. Furthermore, these are transitive actions which require cognitive objects ("remember X," "desireX"), and these are also unspecified. The verb "mixing" is certainly ambiguous for we know that memory and desire are not physical objects which are mixable. Therefore the "mixing" must be "cognitive intermingling" or "confusing." We can state the meaning of this phrase as: "X causes (Y remember A) and (Z desire B) to mix," with the appropriate meaning of "mix." Clearly "X" could be some OBJECT as AGENT or some EVENT as AGENCY; "Y" and "Z" (which could, incidentally, be identical) must be animate and RESPONSIVE; and the entire EVENT, "Y remember A," and the EVENT, "Z desire B," are REACTIVEly related to "mix."

The third phrase returns to the plant image through the word "roots," but imposes the animal/human image through the verb "stir" and the adjective "dull": animate beings RESPONSIVEly stir and humans or animals can be cognitively and bodily dull (there seems to be no reason to interpret "dull" in the sense of "not sharp"). If the underlying meaning involves animateness, what does "roots" signify? Metaphorically "roots" could suggest the past or memories of animates; however, the vegetable reference creates, as do the previous phrases, an intermingling of plant, animal, and human: a kind of imposed semantic unity. In this line we find the INSTRUMENTal phrase "with spring rain," which must require some AGENT, a REFERENT not to be found in the superficial subject "April." Since no AGENT could employ the "spring rain" as INSTRUMENT, we discover, by inference, the fundamental REFERENT for which

"April" has been substituted: nature (or life spirit), itself a metaphorical substitution. "Memories" are, thus, REACTIVE, reacting to the instrumental use of "spring rain" while the rememberer is RESPONSIVE, responding to the rain by remembering the unspecified object of the previous phrase. Under this interpretation, "roots" are both metaphorical for memories and synecdochic for the animate beings which have them. If "roots" are taken literally, the RELATION between them and plants is part-whole (INALIENABLE POSSESSION) if metaphorically, the RELATION between the animates and the cognitive action of remembering is RESPONSIVE. Yet the very juxtaposition of these two meanings has a single two-way effect: the plants are given a kind of consciousness and the memories are given a kind of physical identity as parts of their possessors. Such observations only serve to illuminate the rich depth of meaning in these lines.

Line 5 finally reveals the pronominalized identity of the object of cruelty and perhaps too the subject of remembering and desiring: "winter kept us warm...." While "us" is only used in discourse, and thereby only by those who can engage in it, the context of the previous lines leads us to conclude that the reference is actually to plant, animal, and human, though not separately. Such a conclusion is only anomalous when we try to separate the fundamental aspects of the meanings of the previous lines into their semantically well-formed component parts. However, the totality of the meaning which contains the organic unity of plant, animal, and human is inseparable: a characteristic of art where anomaly creates new meaning. "Winter" is now the metonymic replacement for nature which keeps the RESPONSIVE "us" warm by covering earth in forgetful snow. Again we have the participial as means or INSTRUMENTal EVENT by which nature achieves the result. Nature can produce both the suffering of April and the comfort of winter. We should ask whether "Earth" is simply the literal object of "cover" or whether it is also a metonymic substitution for the plants/animals/humans which are a part of earth. Both meenings seem consistent with the content of the previous lines as well as with the identification of the various life forms with each other. The snow is forgetful yet we know that only animals/humans are capable of remembering or forgetting: "snow" is personified, completing or furthering the identification of every aspect of nature with every other. The "snow" stands for the plants and animals and humans as much as for the "earth"--the state of the consciousness of man is at once typified in, and produced by, the "snow." The literal paraphrase (which does not, as we have indicated, capture the precise and total meaning of the lines) might be stated as: "Nature kept us warm in the winter by means of causing us to be covered in snow which made us forget X." Obviously the "X" is linked with the previous object of "memory" and "desire," and even "warm" has to mean both physically warm and emotionally secure.

The second participial of this sentence, "feeding a little life with dried tubers," is the second means by which winter—nature in winter—"kept us warm." "Life," the nominalized form of the verbal structure "animates live," is again a metonymic substitution of essential action for actor (perhaps thought of as INALIENABLE ACTION). The phrase "with dried tubers" is either an instrumental phrase of vegetable part-whole (INALIENABLE POSSESSION), in which case it is the plant that is receiving food from its tuber, or an instrumental phrase of processed object, in which case it is an animal/human which is receiving its food in the form of dried tubers. In the former case the tubers are INALIENABLE POSSESSED and INSTRUMENTal, and in the latter they are INSTRUMENTal and consumed objects (REACTIVE). Either way, it is the interrelationships between the plant and animal which are created by the image. The ambiguity of "dried tubers" is created by "dried," which is derived either from "tubers dried" or "tubers were dried (by someone)," only the latter involving some AGENT.

We can leave our illustrative analyses now with some degree of assurance that a case system as illustrated in Chapter II and a corresponding semantic structure system as illustrated in Chapter III do provide the reader of imaginative language with concepts and procedures which make intuitive reading more explicit, perhaps more descriptive, than would otherwise be possible. Further, we have seen that the same concepts and methods are applicable to discursive and non-discursive language and that, therefore, there must be, as we initially indicated we believed, a deep connection, if not identity, between these two "languages."

V. SUMMARY AND IMPLICATIONS FOR FURTHER STUDY

The present work has attempted to probe systematically some of the semantic structure of English in a way which may provide a foundation for language curriculum materials. The assumption has been that the hypothesized concepts of 'case' and 'semantic deep structure' provide revealing insights into the regularities of cognitive semantic structures underlying the English language. The development and validity of these concepts depend on the introspective evidence available in the writer as a native speaker. Since any hypothetical account of language has only temporary value at best, this work has been characteristically tentative in making observations and drawing conclusions, demonstrating the process of investigation as much as its formal results. The ultimate test of any hypothesis about the nature of language is its ability to reveal otherwise unnoticed but important aspects of this human capability as they are manifested in a wide variety of natural linguistic forms. Poetry has served as a basis for such a test since it is both a natural and a complex form of language.

The case grammar of Charles J. Fillmore has been the point of departure and seminal work. Thus a fairly large number of case relations or covert semantic relations have been hypothesized to account for discoverable and recurring differences in the meanings of English sentences. Though the number may appear large, it may quite likely be much smaller than that of a "complete" set of relations.

The investigation has proceeded by developing a number of questions which reveal important aspects of meaning when asked of English sentences and their parts. These questions deal both with forms and meanings and their possible interrelationships. Other techniques which have been used require the introspective determination of the various appropriate and inappropriate contexts or situations, both real and linguistic, in which particular sentences may or may not appear. Further procedures have required a similar determination of possible environments in which particular lexical items may appear. Such methods have provided insights into the complex semantic structures of both sentences and words. A desire to efficiently record these insights and to make them effective for future investigation and testing has led to the development of defined terms and a systematic representational device or diagramming system, which in turn made possible the development of a method for analyzing English sentences into their hypothetical semantic deep structures in a way less dependent on intuition.

The final test involving poetry, after an examination of a variety of sentences containing many different semantic relations, has used explicitly only the defined terms developed in previous sections since the use of the detailed procedures of semantic diagramming and analysis in the task of extensive critical reading must be only implicit. This implicitness has made the interpretation of selected poetry manageable in Chapter IV; it has further illustrated how the reader-critic might analyze imaginative language under real conditions.

Clearly in the future there should be: (1), a refinement and extension of the concepts and procedures developed in this work, and (2), additional tests of their ability to expose important facts about English. The set of case relations set forth in Chapter II and the semantic phrase structure component set forth in Chapter III could be refined and extended in the context of the constraints of a formal theory of language, including those imposed by a transformational component. The value of a formal means of sentence analysis as begun in the latter part of Chapter III is obvious and such procedures could perhaps be developed in conjunction with these theoretical refinements. An extension of the empirical scope of these concepts and procedures and a test of their power could take two forms: a statement of generalizations about the semantics of poetic devices, and a statement of generalizations about the semantic-syntactic deviances typically found in children's writing. The former could undoubtedly build on the preliminary investigation of Chapter IV while the latter would have to be preceded by an exploratory probe of children's writing to determine the adequacy of the grammatical model put forth.

Since this dissertation was motivated by the desire to make a mode of linguistic inquiry focusing primarily on meaning available as a basis for developing inquiry-oriented and revealing language curriculum materials, its direct contribution to these materials must be its most crucial future trial.

BIBLIOGRAPHY

Books

Adler, Mortimer. *How to Read a Book: The Art of Getting a Liberal Education*. New York: Simon and Schuster, 1963.

Austin, J. L. *How to Do Things with Words*. Cambridge, Mass.: Harvard University Press, 1962.

Bendix, E. H. *Componential Analysis of General Vocabulary: The Semantic Structure of a Set of Verbs in English, Hindi, and Japanese*. (Part 2 of IJAL, 32.) Bloomington: Indiana University and The Hague: Mouton, 1966.

Bruner, Jerome S. *The Process of Education*. Cambridge, Mass.: Harvard University Press, 1965.

Chomsky, Noam. *Aspects of the Theory of Syntax*. Cambridge, Mass.: M.I.T. Press, 1965.

________. *Cartesian Linguistics*. New York and London: Harper and Row, 1966.

Frye, Northrop. *The Educated Imagination*. Bloomington: Indiana University Press, 1964.

Jacobs, R. A., and Rosenbaum, P. S. *English Transformational Grammar*. Waltham, Mass.: Blaisdell Publishing Co., 1968.

Jarrell, Randall. *The Bat-Poet*. New York: The Macmillan Company, 1967.

Mace, C. A., ed. *British Philosophy in the Mid-Century: A Cambridge Symposium*. London: Allen and Unwin, 1957.

Muller, Herbert J. *The Uses of English*. New York: Holt, Rinehart, and Winston, Inc., 1967.

Whorf, Benjamin Lee. *Language, Thought, and Reality: Selected Writings of Benjamin Lee Whorf*. Edited by John B. Carroll. Cambridge, Mass.: M.I.T. Press, 1956.

Articles

Bach, Emmon. "Nouns and Noun Phrases," in Universals in Linguistic Theory. Edited by E. Bach and R. J. Harms. New York: Holt, Rinehart, and Winston, Inc., 1968.

Chafe, Wallace L. "Language as Symbolization," Language, Vol. 43, No. 1 (March, 1967).

Chomsky, Noam. "Topics in the Theory of Generative Grammar," in Current Trends in Linguistics Vol. III: Theoretical Foundations. Edited by Thomas A. Sebeok. The Hague: Mouton, 1966.

______. "The Current Scene in Linguistics." College English, Vol. 27, No. 8 (May, 1966).

Eliot, T. S. "The Wasteland," in T. S. Eliot: The Complete Poems and Plays. New York: Harcourt, Brace and World, Inc., 1952.

Fillmore, Charles J. "A Proposal Concerning English Prepositions," in Monograph Series on Languages and Linguistics No. 19. Edited by F. P. Dinneen. Georgetown University (1966).

______. "The Case for Case," in Universals in Linguistic Theory. Edited by E. Bach and R. J. Harms. New York: Holt, Rinehart and Winston, 1968.

"Formula for a Poem," Saturday Review, March 22, 1958. (Quoted from an address by Robert Penn Warren accepting the National Book Award for his collection of poems entitled "Promises.")

McCawley, James D. "The Role of Semantics in a Grammar," in Universals in Linguistic Theory. Edited by E. Bach and R. J. Harms. New York: Holt, Rinehart, and Winston, Inc., 1968.

Weinreich, Uriel. "Explorations in Semantic Theory," in Current Trends in Linguistics Vol. III. Theoretical Foundations. Edited by Thomas A. Sebeok. The Hague: Mouton, 1966.

Weinreich, Uriel. "On the Semantic Structure in Language," in *Universals of Language*. Edited by Joseph H. Greenberg. Cambridge, Mass.: M.I.T. Press, 1963.

White, James H. "The Methodology of Semantic Analysis with Special Application to the English Preposition," *Mechanical Translation*, Vol. 8 (August, 1964), 18?31.

Reports

Ceccato, Silvio. *Linguistic Analysis and Programming for Mechanical Translation*. Technical Report No. RADC-TR-60-18. New York: Gordon and Breach, Science Publishers, 1961.

Fillmore, Charles J. "Towards a Modern Theory of Case," *Project on Linguistic Analysis* Report No. 13. Ohio State University, 1966.

________. "The Grammar of HITTING and BREAKING." *Working Papers in Linguistics* Report No. 1. Ohio State University, 1968.

Lakoff, George. *On the Nature of Syntactic Irregularity*. Report No. NSF-16, Mathematical Linguistics and Automatic Translation. Cambridge, Mass.: Harvard University Computation Laboratory, 1965.

Unpublished Material

Shroyer, Thomas G. "A Review of *Cartesian Linguistics* by Noam Chomsky," The Ohio State University, 1967 (Typewritten).

Wierzbicka, Anna. "Negation--A Study in the Deep Grammar," M.I.T., March, 1967. (Program for Exchange of Generative Studies ditto).

SECTION TWO

AN ANECDOTAL ACCOUNT OF A CLASSROOM INVESTIGATION OF THE SEMANTICS OF ENGLISH SENTENCES

by

Barbara Wallace Van Horn

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AN ANECDOTAL ACCOUNT OF A CLASSROOM INVESTIGATION OF THE SEMANTICS OF ENGLISH SENTENCES

INTRODUCTION

Any attempt made by an educator to change his favorite teaching methods for the sake of improvement always seemed to me to be a commendable pursuit. The dangers of becoming stale or too didactic are ever-present to a teacher, especially today. Confidence is always needed, of course; not the confidence that comes from having neatly written, well-organized lesson plans that are dragged out and presented semester after semester, but a confidence that comes from having faith in oneself as a guide for young, searching minds. The change in teaching that I have experienced over the past four years has bred this latter confidence. This change is not one of teaching methods *per se*, though methodology is an important factor. Rather, what has happened is that an entire discipline is being re-defined before our eyes--not just over the past four years, but for several years preceding those. The field of grammar is still changing, and always will change to some degree, because its subject is a living language always capable of renewing and expanding itself from within or of modifying elements no longer of practical use.

Teaching in an atmosphere of constant change creates the insecurity of not being able to make long-range lesson plans--as distinguished here from the long-range ultimate goals of the course. "How to get there," to these goals, is a question that can be answered only as each activity or inquiry session brings to light new ideas. THINKING is the key word in the over-all plan, for the students must be able to think about their native language and be able to express these thoughts.

The students' thinking-about-language gradually became a very important part in the new grammatical program we teachers were helping to develop. The knowledge that we were participating in the evolution of new concepts and new ways of teaching--tried and untried--gave the students and me courage to explore difficult word relationships and search for new meanings "to see if it would work." We learned a principle that probably is true in any effort to effect change--one gains as much knowledge from non-success as he does from success. This point was illustrated very well by John Holt with a "Twenty Questions" game in which children were to find a number between 1 and 10,000:

> They [some students] still cling stubbornly to the idea that the only good answer is a yes answer. This, of course, is the result of their miseducation, in which 'right answers' are the only ones that pay off. They have not learned how to learn from a mistake, or even that learning from mistakes is possible. If they say, 'Is the number between 5,000 and 10,000?' and I say yes, they cheer; if I say no, they groan, even though they get exactly the same amount of information in either case. (1, p. 34)

Keeping this principle in mind helped me to understand that those lessons which seemed to have led us up blind alleys of useless exploration weren't wasted time after all.

Although the experiences described in the following pages are mainly those of the last two years, the exploratory lessons of the first two years proved to be of equal value. These lessons provided the basic groundwork of understanding that gave form and meaning to the class sessions of the next two years. At this point then, I wish to describe briefly the general development of the theoretical principles that began to affect my teaching four years ago.

In September of 1965 I formally began teaching experimental English classes as a staff teacher for Project English at The Ohio State University. The eleven other teachers involved in the project and I met at specified times that year with the directors in order to explore new trends and learn new concepts about language. The first document we handled was the 1964 report published by our directors, Professors Donald Bateman and Frank Zidonis: How Grammatical Sentences are Formed, A Manual for Studying a Generative Grammar of English (2). Transformational and generative grammatical principles, as proposed by Noam Chomsky and his followers, were not only comparatively new at that time, but also were a welcome relief from the principles of structural grammar. The developers of structural grammar had much to contribute, I later learned, in the whole evolutionary process in the study of the structure of the English language. However, at that time I was wholly captivated with the uniqueness of the generative approach. The base rules and transformational rules of sentence construction made sense to me and provided the logical basis for sentence structure that I had always found lacking when teaching traditional grammar. Most of these concepts were new to me; thus the meetings with the staff teachers and the directors, supplemented by a good deal of professional reading, were necessary to help my own thinking process to move along.

The big question, "What do we do next?," loomed large at the end of the first year. I was not satisfied that I had presented any type of an integrated program at all; instead, I feared that matters may have been unduly confused for the students. I felt the need for a well-constructed program with a beginning, middle and end to teach from. The work of that summer helped to fill that void. The teachers worked together in small groups and separately to write a grammar that began at the beginning, i.e., what students must know first, and then developed gradually into more complex sentence structures. This material, when finally completed, covered the range from what a noun is and what the essentials of a simple sentence are, to complex subordinate clause transformations. It was this document that I had planned to use as a basis for the 1966-1967 school year.

As the year moved along, I discovered that some of the transformations and logical patterns that I had found to be so exciting and illuminating were hardly appealing to seventh-grade students. At this point, about mid-way through the year, my thinking took on a new direction. Just how much of this material is helping the students? Are these technical principles really feasible for use in the junior high English class? They have a place somewhere, I reasoned, but I became more and more convinced that the best place for them was in the head of the teacher, filed under "reference material." I had also been using a well-constructed document, A Transformational Grammar for Secondary English Classes by Dr. Zidonis (3), in which he both explained and illustrated the same grammatical principles I was familiar with. The students, strangely enough, had not tired of my material, difficult as it was, and so I turned more to the exercises provided by Dr. Zidonis in his document in order to reinforce what the students already knew, and not confuse them further. Grammar I and Grammar II by Roderick A. Jacobs and Peter S. Rosenbaum (4) were published that year and also proved to be of some value to me in providing new ways for the students to examine sentences.

September, 1967, began a new phase in teaching for me since this class and I would work together in the seventh grade and also the following year in the eighth. A new emphasis in linguistics was on the semantic structure of English sentences. Before this time, structure and meaning had been separated so that it was possible to talk about structure without attending to meaning. But the need for investigating the relationship between structure and meaning was strong and led to the study of case relationships. It was with the case grammar of Charles J. Fillmore (5) and later the expanded case grammar of Thomas

Shroyer (6) that I began the third year of teaching in Project English. Transformations were still important, however, as will be indicated in Part II of this paper.

The fourth year, 1968-1969, was a continuation of the third. Relationships of conjunction, restriction and nominalization set forth in the work of William Craig (7) were taught and applied whenever they fitted the need of the class. Emphasis that year was on structure and meaning of student sentences instead of on textbook sentences that had been written specifically to illustrate a grammatical principle. Most of Part II deals with this last aspect of the teaching.

In both Part I and Part II, I try to show what has been and can be done with new concepts in the teaching of language. Part I considers literature and advertising--what the student reads (input)--and shows how a few grammatical principles may be applied to aid understanding. Part II considers composition and sentence structure--what the student writes (output)--and shows how a few grammatical principles likewise may be applied. If a student can read and write in his native language with a fundamental grasp of the inner workings of that language, I believe the world is his.

LITERATURE

In planning a course designed to examine the grammatical and semantic techniques of one's native language, a teacher must keep in mind two vital communication relationships: the speaker-listener relationship and the writer-reader relationship. A student finds himself involved in one of the above relationships whenever he comes in contact with language. It is obvious that he cannot be a reader unless something has been written, although it is conceivable that he could be a writer without anyone else reading his material. The importance of the writer-reader relationship reveals itself in composition work, for example, when teachers try to direct students to write for a particular, well-defined audience. The audience might be a group of classmates, a friend, the teacher, parents, fellow hobby-enthusiasts, or a combination of these. It is interesting to note that in diary-writing the student almost always writes for an audience of one--he is both writer and reader in the communication relationship. This subjective type of writing usually becomes more objective as the audience grows more inclusive. Thus an awareness of this basic communication relationship will affect both the content and style of the student's work as writer or as reader.

Examining sentences in the context in which they were written can be a rich experience not only in analyzing technique and syntax, but also in unlocking beauty and meaning conveyed by the particular words and word order chosen by the writer. In most English courses the various forms of literature are studied apart from syntactic or semantic considerations. What the student as reader misses in this approach is obvious. Because the writer-reader relationship is ignored, the question, "What is the author saying?," predominates in the lesson, while the question, "How has the author effectively said what he had to say?," is not asked. Both "How" and "What" a writer says must be considered concurrently. Often a student struggling with the "What" will gain new insight as a result of the deeper work relationships revealed by inquiry into the "How."

Incorporating literature into a grammar study program was a task that I found to be challenging. For me, poetry was the mainstay in the two-year course because poetry uniquely and "legally" thrives on syntactic and structural deviancies. Sentences from novels, too, offered interesting grammatical-semantic relationships providing a wide field in which to discover and to learn the stylistic variations of different authors.

A third form of writing that I found most helpful was advertising. Though few people would classify advertising as literature, I include it here to show as completely as possible the implications that the study of language in its written form can have to deepen the understanding and communication of ideas between the writer and the reader.

Poetry

A study of one's native language that did not include the poetry of that language would be incomplete indeed. Robert Frost once wrote that a complete poem is "one where an emotion has found its thought and the thought has found the words . . . ." By developing a sense of what words can do, and the feelings language can convey through poetry, the student can develop an invaluable awareness of the role of metaphor in the expression of his own life experiences. Not only will he be able to discover a given poet's emotion-experience through the words of the poem, but hopefully will begin to see how to use metaphor himself. With today's emphasis on communication, the need to express adequately thoughts and feelings emerges with increasing importance. What better skill can a student develop than a sensitivity to words, grasping the underlying bond between a physical reality and an abstract concept?

In the English language, word order is a basic grammatical fact. Where other languages may depend upon various inflections such as case endings to determine the relationships of the words in a sentence, English depends chiefly upon word order. Children learn this fact at a very early age and unconsciously put it into practice. Consider three-year-old Susie, for example, as she runs into the kitchen from the back yard, bangs the screen door, and screams, "Johnny's dog bit me! (or bited me!)" Has Susie been instructed yet that the subject usually precedes a verb--that the subject is the agent, the verb is the action and the direct object is the receiver of the action? I think not--she just knows who bit whom, no difficulty about that! The knowledge of basic word order is learned early by native speakers and forms a basis for current linguistic study and teaching.

If it is approached with enthusiasm, poetry can reveal many possibilities and linguistic variations not accessible to the student through everyday communication, whether spoken or written. In this linguistically rich genre, poets compress meanings and juxtapose word orders to achieve the best effect possible. It is the poet's purpose to alert our senses, stir our imaginations and portray both simple and complex human experiences. If a poet uses language and syntax in a more flexible manner than a prose writer, this can be explained by the need for emphasis, clarity and compression. In spite of, and perhaps because of, the obvious grammatical liberties in many poems, a student should learn that it is possible, with a knowledge of a few basic logical and linguistic principles, to think through and into the poem in order to grasp the essential word order and deep inter-relationships of the words.

In the poem "Digging" by Donald Hall, not only do we see a fine example of word order and sentence variations, but we also see a striking imagery carried throughout the poem. Combining a study of the nature metaphors with a specific analysis of the sentence constituents and logical relationship of sentence parts provided a very worthwhile study. We had studied many poems together in the class with great enjoyment.* Occasionally a poem did lend itself to grammatical analysis, a challenge which the students always accepted eagerly. If one is committed to the belief that a poem displays a certain technical perfection as well as an artistic perfection in its expression of thought and feeling through language, then a close reading of a poem in no way violates its treatment as a work of art. On the contrary, looking into the poem in this way almost always reveals newer, deeper meanings, clarifies ambiguity, and identifies underlying logical relationships.

As a preparation for exploring this poem with the students, I studied it from several angles. Since I enjoyed this poem so much and thought the students would enjoy it too, I knew that the class would be as effective as my preparation was thoughtful. In no other area is a lack of teacher preparation more disastrous than in the teaching of poetry. The teacher's capabilities in carefully guiding the students in creative experience, no matter how subtle or dynamic a feeling the poem may portray, will serve to set the students on confident ground. They then can proceed, with kindled imaginations, into individual as well as shared explorations of the poem.

---

*Scott-Foresman's anthology of poems, Reflections on a Gift of Watermelon Pickle and Other Poems, provides good poems for study in junior high English classes. More often than not I duplicated copies of poems from many different sources (see Bibliography). Each group of students is unique--this particular class seem drawn to Langston Hughes and e.e. cummings.

Digging

(8, p. 59)

The preparation of this poem, with a special grammatical analysis in mind, consists of five steps which may appear difficult and time-consuming at first. However, to me this preparation is an unusually rewarding mental activity for a teacher, one that he cannot help but transmit to his students. These five steps of preparation are:

A. Identifying any problems in the poem.

B. Determining the kinds of intuitions about grammatical knowledge students presently have.

C. Determining the kinds of grammatical knowledge students need to have for the poem.

D. Attempting one's own grammatical description of the poem.

E. Preparing a definite lesson plan for the poem.

The following preparation was written before I taught the poem "Digging" in class. This material is reproduced exactly as it was written at that time.

A. Identifying any problems in the poem.--The most obvious problems in "Digging" are the unusual images, the sentence constructions, the unidentified "you" and the particular point of view.

One unusual image is "a breach gapped." Here the noun "gap" becomes a verb. Another language question: How can one "*die* into the ground/In a *dead* sleep" and then "wake suffering/ a widening pain"? What does it mean to be "thoughtless with flowers"? How can one speak "to bees in the language of green and yellow, white and red"? The language imagery presents problems that grammatical analysis may help to solve.

In a consideration of sentence construction, we see that the poem has four sentences: the first sentence consists of eleven lines, the second and third sentences are two lines each, and the fourth sentence is ten lines long. The first sentence, as an example of a difficult construction, contains five lines of a subordinate idea before the main thought of the sentence is expressed. In both long sentences, many simple sentences containing various ideas have been compressed and embedded. The specific problem here would be how to fit the details into their grammatical places while still keeping the main thought in mind. Since this is challenging for a teacher to think about, the students will no doubt have difficulties as well.

Point of view is difficult to ascertain since the reader is aware that someone is speaking directly and personally to him. However, this use of "you" can also be an objective and impersonal "you" where a person refers to himself or to others generally. For example, a distraught mother might say, "I don't understand these children at all. You work your fingers to the bone . . . you ask them to pick up their clothes . . . do they listen?" The "you" obviously is an objective one not used in direct address at all. The gardener (poet) may be describing an experience he has whenever he comes in from gardening. "Let" in Stanza 2 mars this interpretation though, but does not rule it out.

B. Determining the kinds of intuitions about grammatical knowledge the students presently have.--Because this poem will be studied about mid-way through the second year, the students are at a distinct advantage in their grammatical preparation for an approach to this poem. By the end of the first year of study they had a fairly good grasp of the first five points listed below; the rest were introduced and expanded in the first semester of the second year. These concepts include:

1. Knowledge of the parts of speech. Because they can classify nouns and are aware of different kinds of verbs, the students know that certain verbs take only human subjects. They are aware of personification at this level. Knowing the five verb forms would prove helpful: simple, third person singular (s), present participle (ing), past (ed) and past participle (en).

2. Recognition of metaphor, simile and personification.

3. Knowledge of case relationships in a fairly sophisticated manner.*

4. Comprehension of the logical principle of cause and effect.

5. Ability to detect and to paraphrase ambiguities so that multiple meanings can be determined.

6. Awareness of the concept that the purpose of language study is not to solve all the problems and find all the answers but to explore the richness of the language by inquiring through the obvious into its logical subtleties. Then one can find relationships of structure and meaning.

7. Knowledge of the semantic relationship in a given sentence as well as its grammatical form, with regard to the principles of conjunction, restriction, nominalization and topicalization devices. (7)

8. Ability to recognize and re-work faulty parallel structures in student sentences, and then to categorize them.

C. Determining the kinds of grammatical knowledge students need to have for the poem.--All of the above knowledge would provide the students with adequate tools for grammatical inquiry into this poem. In addition they ought to have a familiarity with the formality of direct address, as well as with verb expansions, including modal auxiliaries. I also think they would need to have a curiosity about the meanings of individual words, not only to understand literal meanings but also to interpret idioms and to see metaphorical relationships.

---

*See Appendix I for a list and explanation of case relationships studied.

D. Attempting my own grammatical description of the poem.--In general, the poem contains figurative language--metaphor, personification, simile--as well as parallel structures, other imagery and an interesting use of tense. The "idea known" is an intimate knowledge of nature, a oneness with nature; while the "image felt" actually projects the reader into this position. The poem then fulfills, through grammatical order and structure, the requirements for making it a work of art, an organic whole.

By its length the first sentence successfully unfolds the image to the reader who immediately becomes involved in the poem. This is indicated by "you" in the second line. The direct address is carried consistently throughout the poem. (However, the poem contains, I think, sufficient facts to warrant the interpretation of an objective "you" also.) A grammatical sense of what is the main idea in this sentence would help a student. As I have diagrammed it in Figure 1, the main thought is "You become a seed in the ground."* Looking at the rest of the poem, I think this first sentence could be incorporated into Figure 2, a larger, but rather sketchy picture of the poem. In this diagram I am trying to structure the main thought, if possible, which is: "If you will abandon yourself to nature by 'becoming' a seed, then you will 'become' a flower and will learn the secrets of nature by speaking its language." Many things are missing in the diagram, but that at least proves that each word and phrase is essential to the poem as a whole. Working with this very basic structure, I'll go through two or three of these ideas that could be added.

First of all, one can see parts of this poem as the opposite of personification. Such verbs as "die," "wake," "suffer," and "struggle" usually take animate or human subjects. In this poem the subject of these verbs is "you," obviously human, but a "you" capable of having a green shoot struggle through its ribs! Since the latter activity is not human or even animate, the human "you" has obviously taken on some seed characteristics. So "you" with seed or flower characteristics is not the same as a human "you." Thus when the seed or flower acts through verbs such as "speak" and "suffer," we have personification. But the situation is just the opposite if the "you" is considered to be human and operates with verbs that usually take inanimate subjects, as in "you will blossom."

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*This sentence is, of course, semantically deviant--that is, not literal, but metaphorical.

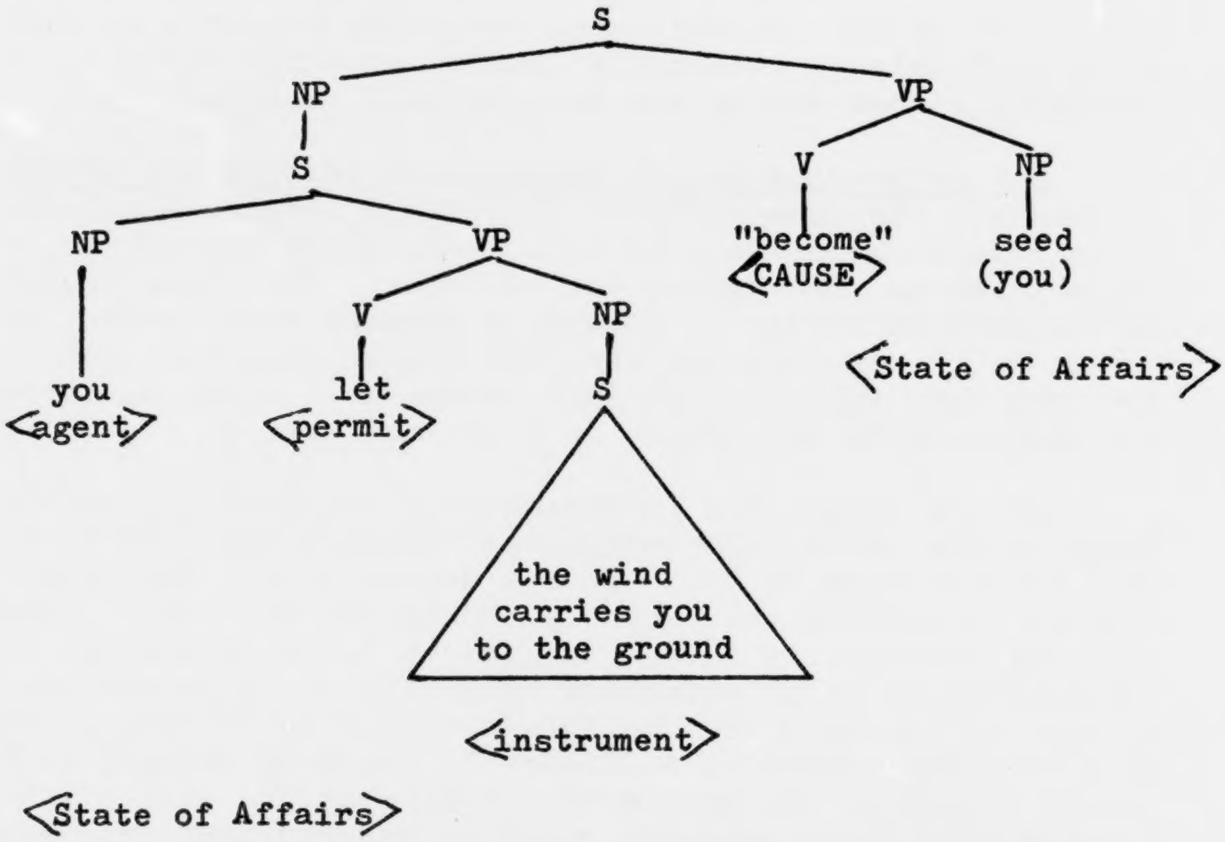

Figure 1

The last stanza says many things that I left out entirely in the second diagram. For one thing, the "you" who "will blossom in the shape of your own self" reacts* once it blossoms just as it reacted as a seed in the ground. In both places it completely fulfills nature's law regarding it: the seed must die and grow and the blossom must give itself to bees and must share its color among other flowers.

Examining the "you" more closely might be interesting. "You" is agentive in the beginning since "you" might have been digging in the garden. "You" also permits the wind to act upon him as an instrument. In both cases it is clear that "you" is human. In the instrumental sentence the wind is an agent carrying "you," so "you" is objective in the sense that it receives the action of the wind carrying it to the ground. "You" takes on non-human qualities of a seed and is then dative because it reacts to the action of being dropped into the ground. With the aid of dirt and water (instruments) the seed grows. In this way "you," now a seed, is acted upon and in turn, reacts.

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*See Appendix I for definition and illustration of the reactive case.

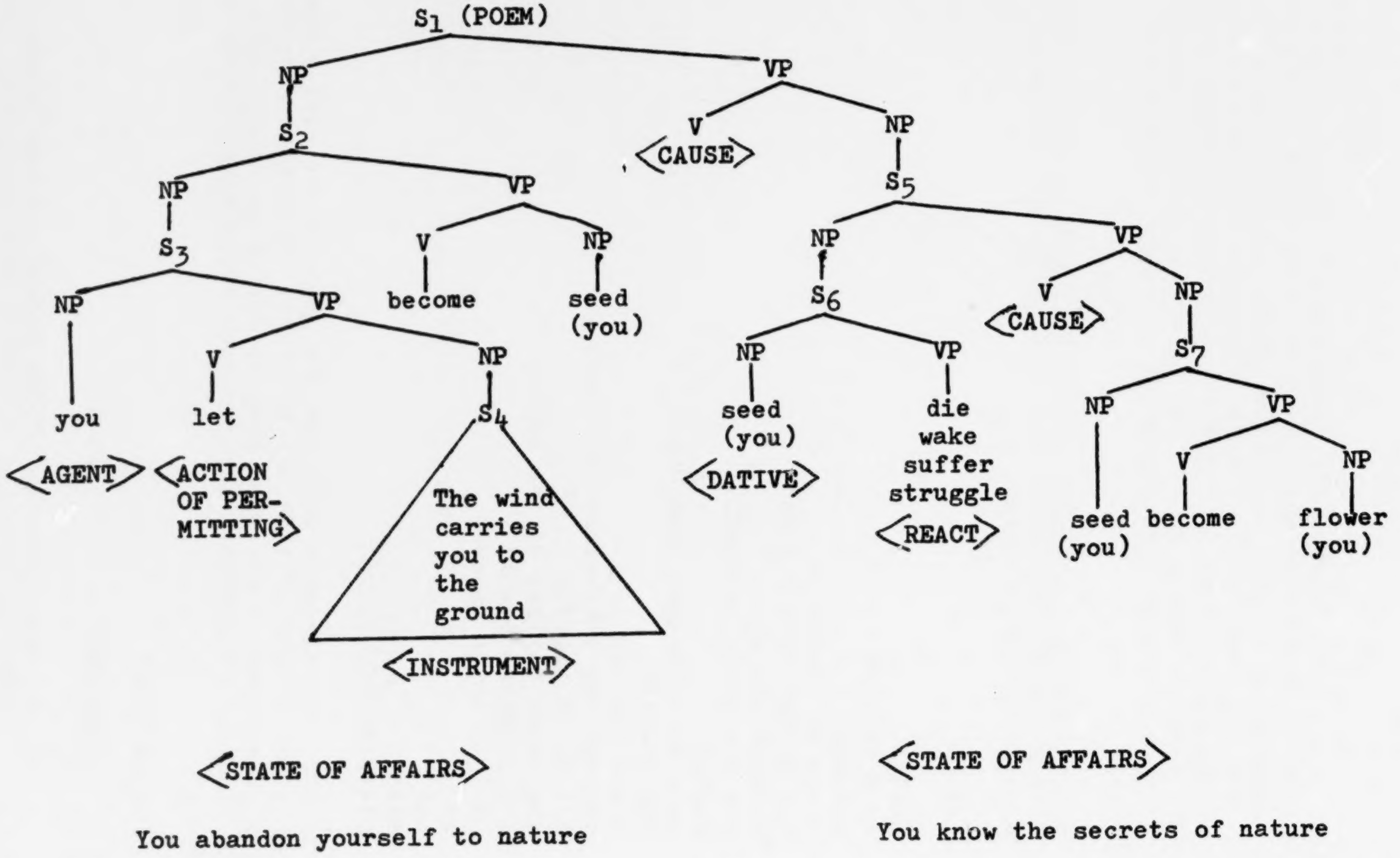
S1 (POEM)
NP
VP
S2
V
CAUSE
NP
S5
NP
VP
S3
V
NP
NP
VP
become
seed (you)
NP
S6
VP
V
CAUSE
NP
you
V
let
NP
S4
NP
seed (you)
VP
die wake suffer struggle
S7
AGENT
ACTION OF PER-MITTING
The wind carries you to the ground
INSTRUMENT
DATIVE
REACT
NP
VP
V
NP
seed (you)
become
flower (you)
STATE OF AFFAIRS
You abandon yourself to nature
STATE OF AFFAIRS
You know the secrets of nature

Figure 2

This reaction or growth causes a new "you," the flower. The action at the end is one of blossoming. Compared to "digging" (Stanza 1) or "let" (Stanza 2), "blossoming" (Stanza 5) is a non-deliberate or non-motivated-by-a-thinking-agent action verb while "digging" and "let" are active verbs motivated by a thinking agent. Yet the same "you" is used throughout the poem as the agent of all these verbs. Note the gradual change then--really a deeper, broader extension of "you" from its initial, exclusive use as human to its all-inclusive use as human, animate and inanimate.

E. Preparing a definite lesson plan for the poem.--Before being introduced to this poem, the class will have explored the poem "Fueled" by Marcie Hans:

FUELED

(9, p. 83)

In this poem the students will see the grandeur of such a simple action as the growth of a flower or plant. Once that general concept is enjoyed, i.e., when they wonder at nature, I will teach "Digging" as another, more intense experience of this same wonder.

Lesson Plan:

1. OBJECTIVE

   a) To experience the "idea known" and the "image felt" in order to determine what makes this poem an organic whole.

b) To look closely into the use of personification through specific grammatical inquiry.

2. PROCEDURE

a) Pass copies of poem to students.

b) Recall poem "Fueled" by Marcie Hans. (8)

c) Ask general leading questions:

(1) Did you ever try to imagine yourself as a seed in the ground or a flower blooming in your garden?

(2) Have you ever tried to enter into nature, not as a human being, but as a sprouting seed, a tiny green shoot or a beautiful flower?

(3) How are the ways you grow different from those of a flower? (Brief discussion can stimulate thinking without getting into a biological debate.)

d) Read the poem.

e) Ask questions that may be used to guide discussion:

(1) What happens to the gardener one night after he has been digging in the garden? Does this happen to the gardener or to "you"?

(2) What is it like in the poem to be a seed in the ground? Is the seed really dead? Does it hurt the seed to grow? Whose are the "tight ribs" and "dead flesh"?

(3) Who or what blossoms? Can flowers think? How do they speak a language?

(4) How are suffering, death and struggling shown in this poem? Do all things in nature suffer, die and struggle? In the same way?

---

*Questions need not be in this order. Some probably won't be used. They are planned to clarify fuzzy thinking, if this becomes necessary to do.

(5) Does the poem tell us anything about this sentence? Man can totally relate to the beauty of the natural universe only by probing the hidden things of nature (e.g., dying seed).

(6) Compare the words and phrases, but mainly ideas, in "Fueled" to those in "Digging." Can you say anything about the titles?

(7) What examples of personification are in "Digging"? Do any sentences or phrases in the poem make you think of a personification reverse?

f) Conduct grammatical study.

Have the students inquire into the structure after showing basic sentence pattern--how many lines in each sentence.

(1) Find Agent-Action-Object relationships. How would you classify the agentive nouns? Any instances of personification?

(2) Examine a couple of these in detail not only to reinforce personification but also to explore imagery in detail.

e.g., wind drops you in cracked ground

<Agt.> <Act.> <Obj.>

you speak...language...*
(flower)

g) Reread the poem.

Teacher reads once more, as well as individual students who have prepared in advance.**

---

*Add "speaking to bees" and "language of green and yellow, white and red" to basic structure.

**Reading a poem aloud is not a haphazard affair. It can be accomplished successfully only if the reader knows, understands and enjoys what he is reading. Preparing a reading in advance is important.

This formal lesson plan concludes the preparation that took place. What follows is a record of what happened in the teaching of the poem.

Actual study and discussion of the poem "Digging" took three class periods. The class did respond, as I had hoped, eagerly and with interest. As in any study that involves inquiry and creative thinking on the part of the students, issues branched off or expanded beyond the lesson I had prepared. A few of my planned thought questions seemed irrelevant as the class proceeded so of course I did not use them. The students were very much intrigued by the metaphor of the poem and the fact that the poet could convey the feeling of what it is like to be a seed in the ground. The ideas we shared on the poem's language, specifically in the areas of semantic and syntactic structures, are worth mentioning. Of our thinking-about-language process, four basic areas with grammatical bearings could be identified and discussed. The first of these areas was the basic structure of the poem itself, including the significance in the basic structure of the four sentences and their relation to the poem as a symbol of growth. The next thought-provoking point was the relationship of the words, one to another. Considered here were the agent-action-object case relationships. Third, various parallel words and phrases appeared in the poem and stimulated exploration, comparison, contrast and categorization. Finally, personification as a key to the metaphor and symbolism (if any) in the poem were explored from a grammatic-semantic point of view.

You will recall that in my own analysis of the poem I concentrated somewhat on the word "you" trying to identify and pin down what that word includes. The diagram helped to show that the expansion of the "you" included not only the human being as human but also the human being as an integral part of the world of nature. I was grateful for having struggled with this notion since the students ran into the same difficulty. Their solution was this: since "you" gives consent to become as small as a seed, the poem is a strictly imagined experience in which the person never ceases to be human. The experiences "you" has, first as a seed, then as a flower, are totally metaphorical, symbolizing growth.

Using some of the latter thoughts in our discussion on structure, David came up with a notion that revealed his search for basic unity in the poem. The first sentence (11 lines), he observed, tells how "you" got into the ground; the second and third sentences (4 lines) tell what "you" does there and what the ground is like. The final sentence (10 lines) tells how "you" emerges from the ground as part of the growth process, revealing the purpose of going there--to experience this unique type of growth.

Believing that growth takes place in a spiral fashion, Dan added another dimension of meaning to the poem. On the blackboard he showed that the poem's unity could be seen by a two-dimensional spiral diagram (Figure 3)*:

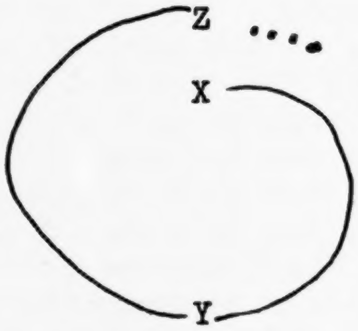

Figure 3

Starting at X, the beginning of the poem, you move downward to experience a stripping away of former ways--in this poem the seed literally dies in the ground (Y, the middle of the poem). Life emerges after a while and you grow upward once again, only this time to a point higher than or beyond that from which you started (Z, the end of the poem). The additional insight provided by this experience allows growth to continue, as indicated by the three dots. Unlocking the structure of a poem is a matter basic to the understanding of it as an organic work of art and paves the way for grammatical and semantic inquiry.

In discussing the relationship of words in this poem, we limited ourselves to the agent-action-object relationships. Words and phrases that are instrumental or locative were pointed out as the lesson proceeded, however. Mention of these relationships was brief, and was limited to Stanza 2, along with the first line in Stanza 3:

let a wind raised from the South
climb through your bedroom window, lift you in its arms
--you have become as small as a seed--
and carry you out of the house, over the black garden,
spinning and fluttering,

and drop you in cracked ground.
. . .

---

*I do encourage the students to use diagrams to show structured unity, relationships or discrepancies. Simple drawings often can give tangible expression to ideas less adequately expressed by multiplying additional words.

The point of interest here centers around the word "wind" and the verbs connected with it: "raised," "climb," "lift," "carry," and "drop." The last four verbs show the wind as the agent of the action, even though the verbs are somewhat metaphorical (to be discussed later). The relationship of "wind" to "raised" is another matter though, a matter that the students were quick to perceive.

That the wind does not perform the action of "raising," but actually is what is "raised," indicates that it cannot be the agent of that action, but is its object. In trying to determine the agent of this sentence, one student at first suggested "South," but later changed his mind, agreeing with the rest that "South" is locative. The students decided that the agent is unexpressed, and in this instance must be "nature" or "the forces of nature," those particular forces that combine to cause a wind to begin to blow. This ability to look into the deep structure of the sentence indicates that logical thinking is taking place. Determining the presence of and trying to identify an unknown agent implies a certain confidence in being able to handle both the semantics and syntax of the sentence. The importance of the surface structure cannot be neglected, however, since this is the way the poet chose to express his ideas. It remained a very simple matter then for Mike to observe that the surface structure sentence was a passive transformation of the deep structure meaning that we had unlocked, though the agent, usually indicated by the word "by" somewhere after the verb, was not expressed.

Showing "wind" in relation to the other four verbs came next. As the agent of the verb "climb," "wind" is in a unique position because usually human or animate things climb. (An interesting but brief discussion ensued about roses climbing a trellis and planes climbing upward in the sky. As usual, this brief exploration of a word's many meanings and uses gave us a sharper awareness of how the poet deliberately must choose the right word to say exactly what he means.) Whether or not "climb" is metaphorical in this sentence, we left for each individual to decide.* The point to be made in the context of the lesson was that "climb" does not affect an object, but is followed by a locative phrase.

---

*It is possible to say either that a word has one original meaning, a root meaning, and all other uses of the word are metaphorical; or that multiple, various meanings of a word can be accepted as non-metaphorical if these meanings are accepted in standard speech. Note that this principle was not accounted for in my own earlier analysis. I had considered only the literal, root meaning of each word at that time and did not allow for variant, accepted meanings, I still prefer to think about metaphor in the former way--thus making much of our speech metaphorical. However, this view is arbitrary.

The object of the last three verbs, stated immediately after each verb, is "you." These verbs, parallel to the same agent or subject, show an interesting sequence. First the object is lifted, then carried, and then dropped. Such a grammatical parallel, along with the action each word connotes, aids the smooth movement of the poem from phrase to phrase. Whether these verbs are metaphorical in relation to the wind depends upon the same principle applied to "climb."

The poem "Fueled," by Marcie Hans (9), had been studied in a previous lesson with definite attention to parallel words, phrases and of course, ideas. The many parallel ideas revealed by contrast are striking, such as the million wings of fire made by man contrasted to a single thought from God; or the intensity of "the rocket tore a tunnel/through the sky" compared to its quiet parallel, "the seedling/urged its way/through the thicknesses of black." The irony of "everybody cheered" followed by "no/one/even/clapped" cannot be ignored. Parallel ideas, presented with precise thought in their verbal construction, convey an experience by bold, shocking contrast.

In the first stanza of "Digging" the last two lines stand out in terms of parallel construction:

> your fingers grubby with digging, your eyes
> vague with the pleasure of digging . . . .

Both external and internal involvement of the gardener in the digging process was shown by Sally when she initially questioned, "How can eyes be vague?" Jeff countered that the phrase "vague with pleasure" must be considered as one. To show that she was thinking and had followed Jeff's advice, Sally then commented that eyes reveal the inner man and that "vague with pleasure" could only result from an internal involvement of spirit that would produce such pleasure and satisfaction found in gardening. Teri commented that this notion fit in with the whole poem anyhow, since the poet or gardener evidently wanted to get pretty involved with nature! Sally finished her comparison by noting that "grubby" was the external manifestation of the digging that had taken place.

The parallel verbs related to "wind" were mentioned in the section above on word relationships. However, "spinning and fluttering" in Stanza 2 were noted as parallel actions attributed to "you" as the wind continued its activities. In Stanza 4, lines 2 and 3 were mentioned in terms of parallel structure:

> a widening pain in your side, a breach
> gapped in your tight ribs . . . .

Whether or not these lines are grammatically parallel afforded an interesting discussion. Semantically, they appear almost synonymous. Obviously the word order is not the same in each surface structure, but that did not stop Tammy from trying to show that "widening pain" and "breach gapped" seem very similar. It was pointed out that "widening" and "gapped" are verb forms used to describe the nouns "pain" and "breach." However, the semantic similarity seemed to satisfy the class's search for parallel structures. Additional phrases found by students were simple structures that add a gentle movement to the poem, such as the shoot struggling upwards "to the sun, to the air of your garden" or the final condition of speaking "in the language of green and yellow, white and red." This concept of color is deceivingly simple, since the poet's unusual use of it provoked much thought, as succeeding paragraphs will show.

The metaphorical nature of the poem brought about the most thoughtful discussions we had. Both grammatical and metaphorical notions stemmed from the same discussions, and talking about the one often enlightened thoughts about the other.* As a concluding assignment, I asked the students to write some of their thoughts on the meaning of the poem. Not everyone has the opportunity or the talent to express himself and his ideas to the class at all times, so this type of exercise gives them a chance to do just this. Too, the "very thinking" members of the class often pick up ideas from one another in class discussion. This stimulation causes their ideas to evolve, broaden, deepen _or_ go wild--thinking that a follow-up assignment can detect and guide.

Some of these comments on the poem are worth recording, I think, even the statement Pat made when he wrote, "The poem reminds me of Biology . . . ." What pleases me is that he did not hesitate to express his opinion. Pat's was a unique paper from another standpoint too. He wrote something that would warm the heart of any English teacher--he recalled one theme from a novel that we had studied the previous year in seventh grade and related this theme to the poem:

> . . . this poem reminds me of the novel we took last year, _Dandelion Wine_, because of its growth

---

*A poem cannot be dissected into compartments, though particular aspects, as I have tried to show, can be isolated for a brief time in order to take a closer look--somewhat the same principle guides the use of a microscope. The object examined should not lose its identity with the organic whole.

> significance. You remember when Doug was in the woods and discovered that he was alive. I feel just the same about this poem. Here we have a man who owns a garden and apparently likes nature very much. He is a person like Doug who doesn't really find himself until he is something.

In trying to show that "he is something" in the poem, Jeff was almost poetic in his views:

> . . . and from his dead self a new part of him, a live part of him comes forth . . . struggles upward to the sun, the air, the best of nature. Here when he blossoms it will be his finest hour. He will speak to bees in the color language known only to nature.

The idea of growing "to be something" appealed to other students as well:

> When you go into the ground and die so the shoot may live, you are just beginning to transform yourself. The green shoot is the new you. That is the transformation. And when you blossom, you're a new, better person. And this will keep going on and on and on.
>
> Dan

> The poem shows how man enters into nature. He becomes "as small as" a seed, not a seed. He struggles through growing up out of the ground to become himself.
>
> Mike

> But all this is worthwhile because something comes out of your pain and hard work. You get where you want to be, like the seed gets where it wants to go as a flower. You find yourself . . . you can be what you want to be, because the flower blossoms in the shape of its own self.
>
> Chris

> The use of the changing into a seed symbolizes man's power to lead the kind of life he desires. It takes work just as the seed has to work to reach the surface. And when you finally make it, you're what you're meant to be. I don't really think that the poem symbolizes growth though what I said has to do with it. Rather this is symbolic of man's changing completely from one mental state

to another.

Mike H.

Tim concentrated on the wonders of nature in the poem:

> The poet is trying to break through the Mother Nature barrier . . . . [At the end] you now belong to the beauties of Mother Nature's domain . . . .

Also thinking about nature, Jeanine thought of personification (which we had mentioned in class) and told her own version:

> "You have become as small as a seed" states a reverse personification of a human into something non-human such as the seed. Instead of calling it a reverse personification, I think it should be called plantification. This is because the human is imagining himself with qualities of a plant.

Bill entered into the experience of the poem so much that he probably would not agree with Jeanine about the human being's merely imagining himself to be a seed or plant. Bill's observation, a perfect suspension of disbelief, shows his involvement in the poem:

> I think that as stupid as it sounds, to write such description the author must have been a seed in the ground or a beautiful flower at some point of his life.

This last example reveals an ultimate involvement of shared experience with the writer that the reader can achieve through the medium of words if he has pondered both the "what" and the "how" of the writer's ideas.

Not all poems lend themselves to grammatical exploration to the same degree. For many poems, the meaning need not be revealed through structural analysis, though it is surprising what new concepts emerge when deep meaning is probed from a syntactic viewpoint. It must be kept in mind that a poem is read not as a grammar exercise, but as a work of art, an opportunity for the reader to have a new experience. Any concepts about language that the student/reader brings to a poem should not stand in the way of his enjoyment of it; rather, these concepts should be tools used to unlock the experience, if necessary. These "tools" are, for the most part, not rules written down, one after the other, to be mastered and then applied. Instead, they are a way of thinking that can be acquired through instruction and practice and developed by inquiry. A teacher who will find poems that have meaning for his students and that provide worthwhile language exploration will find both himself and the students deeply involved in the unique communication of an artistic experience.

Novel

Poetry is not the only form of literature that offers an opportunity to look closely at language. Prose writing, such as that found in novels and short stories, contains sentences and passages that often utilize very complex grammatical structures. Choosing a particular novel as an example of good prose takes much thought, but the effort is worthwhile. If a teacher knows why he is teaching a specific novel, and if he is aware of its basic structure and its treatment of human values, he can expand both structure and meaning through grammatical exploration.

In grades seven and eight the students must first be taught how to read a novel. "Learning by doing" is an axiom that works very well in this situation, especially when the novels are carefully chosen. The group of students I worked with in the seventh grade read The Adventures of Tom Sawyer by Mark Twain, The Light in the Forest by Conrad Richter, Greek Gods and Heroes by Evslin, Evslin and Hoopes, White Fang by Jack London and Dandelion Wine by Ray Bradbury. When this class reached the eighth grade, we studied in English class only one novel, The Red Pony by John Steinbeck.*

Each novel read during the seventh-grade year helped to expand the horizons of language for the students. For example, The Adventures of Tom Sawyer opened up the world of dialectology and linguistic geography. Dialogue as a form of character revelation is one of this novel's strengths and deserves to be treated as such. As another example, The Light in the Forest offers much nature imagery in the form of similes. The semantic basis for Conrad Richter's comparisons can be discussed as can principles for categorizing like and seemingly unlike objects. One very interesting feature of this novel is that two points of view, Indian and white man, are revealed through clever use of loaded words. Language in this context becomes a most intriguing study. Each novel, then, can be examined in a unique way, depending upon the author's careful use of language.

The one novel that I wish to describe in more detail is Steinbeck's The Red Pony (10). This story is rather sophisticated not only in its symbolic imagery, but also in its characters' relationships to one another, to the animals and to nature itself. These latter ideas, along with character contrast, formed the basis for our study of the novel through discussion. Occasionally an unusual or penetrating sentence would be cited by a student, and on these occasions we almost always would take time to explore the sentence. Toward the end of our lessons dealing with The Red Pony, the students arrived at the conclusion that our types of sentence analyses revealed Steinbeck's style to be deceivingly simple--he says profound things in a simple way and simple things in a subtle, not ordinary way. In addition, many examples of various complex sentence structures were identified and cited as models. It is these three notions then that I want to explore at this time: first, Steinbeck's ease in saying profound things in a simple way; second, his skill in telling simple things in an extraordinary way; and third, his talent for constructing various complex sentence structures.

---

*The eighth grade was taught literature and reading in a class separate from that of grammar and composition. The latter class was the one I taught.

In keeping with the simplicity of the story, Steinbeck tailors his sentences to fit their subjects. A boy and his horse, a boy and his family, a boy and death--all these simple facts of life are basic to existence, therefore very profound. In passages that reflect one of these simple truths, the fact that Steinbeck keeps his style and words simple points up the great sensitivity to his subject an artist can reveal in his writing. A deep revelation of human values exists in this sentence: "He didn't care about the bird, or its life, but he knew what older people would say if they had seen him kill it; he was ashamed because of their potential opinion" (10, p. 37). Jody's attitude toward an animal's life or death is important here, as is his hesitancy to tell older people about what he has done. When we discussed this passage in class, Jeanine related it to a previous class, when she commented:

> This sentence deals with what we were talking about a few days ago--what people will think. Jody really doesn't care about the dead bird, but he does care about what older people would say if they had watched him kill the bird.

Jeanine's reflection resulted from a few days of good discussion on why we do the things we do and to what extent the approval or condemnation of others guides our actions. The lesson culminated in some rather well-thought-out essays in which the students took a stand and explored the issue by relating examples. Jody's experience struck Jeanine as a good example of an abstract notion she had been trying to express a week earlier.

Another sentence came up for consideration that showed Jody in relation to a specific older person. Thinking about the relationship of Jody to Billy Buck, Sally called our attention to the episode in which Jody had just been told he would have another colt. Jody was grateful to Billy for having praised him to his father: "In passing behind Billy Buck he very nearly put out his hand to touch the blue-jeaned leg" (10, p. 56). A very simple statement, Sally felt, but one that reveals gratitude coupled with deep feeling. Mentioning Jody's desire for a physical contact with Billy Buck serves to emphasize the particular kinship of spirit between these two. In a tangible way then, Steinbeck reveals an abstract concept that becomes more clear as one stops to ponder the sentence and consider all that had preceded it. This is a typical, almost reflex action of a child, Sally observed, as she added that "all of us are that way sometimes."

One final example of deep meaning hidden in a simple surface structure can be found in the episode in which Carl Tiflin makes what he thinks is a humorous observation, which in reality deeply hurts Gitano: "'If ham and eggs grew on the sidehill, I'd turn you out to pasture too,' he said" (10, p. 46). The reader knows that even though Carl hates his own brutality toward Gitano, he cannot suppress this attitude or feeling. The surface humor serves only to emphasize the point more strongly. As we talked about this sentence in class, the students were sensitive to the issue at hand in varying degrees. Placing the welfare of a human being on the same plane as that of a horse bothered some students, but not others. Note the degrees of increased understanding in the following student observations:

> I think the sentence is kind of funny and clever. I think he [Steinbeck] couldn't say it in any better words.
>
> Pat

> This sentence is mean but it's clever. It compares Gitano with the horse. Carl Tiflin's horse is old, just like Gitano, but the horse is no trouble because he gets his food from the pasture.
>
> Suzanne

> On the surface the sentence seems rather harsh, but also humorous and quite clever . . . . What he's [Carl] really saying is that if he could feed the old man for free and forget about him he would; but he just can't afford to have him around.
>
> Teri

> The sentence is funny when you read it, but it is really mean. I think Carl wanted to get the message across of how he felt about Gitano. He didn't want to say how he felt right to Gitano's face, so he put in a little humor to cover up his mean words. It said somewhere earlier in the book that Carl didn't always say what he wanted to get across, but instead was sly about it; this sentence is a good example of his character.
>
> Marilyn

> I think it was clever, but harsh and to the point. The real meaning that Gitano should get is to "get lost."
>
> Dan

> This was funny at first as it was meant to be. But it is really harsh. Carl is saying that he'd let the old man go because he wasn't worth anything . . . . Carl seemed to resent older people--both Gitano and his wife's father. Perhaps this was his philosophy on old people altogether.
>
> Chris

> Carl is revealing his opinion of old age as a nuisance. He felt that if he kept the old man it would hurt his economy so he gave Gitano a hard time. Any time Carl's pity would flare up he would make a cruel remark just to keep his status. I think the sentence even on the surface is a cruel joke.
>
> Jeff C.

The depth of understanding revealed by the individual students can be directly related to the issue at hand--Steinbeck can successfully camouflage a profound idea in the guise of a simple statement. It is up to the reader to look beyond the surface statement.

The second aspect of Steinbeck's sentence style is more structural than the previous one. The ability to relate a simple notion in an unusual and interesting way certainly is an art worth developing. Through observation and analysis of sentences, the class discovered that using words in unusual ways or not always stating the obvious but relying on a reader's ability to make implications, are ways of promoting this interest. Consider this sentence: "The dogs trotted around the house corner hunching their shoulders and grinning horribly with pleasure" (10, p. 5). The use of "horribly" between the words "grinning" and "pleasure" presents a paradox that must be resolved to arrive at the exact meaning. Even "trotting" connotes a free, leisurely, open movement while "hunching" implies a restriction of movement.

In keeping with this same concept of simple ideas stated in an exciting way, we took this sentence in class one day: "He [Jody] moved on now, his knees bent slightly, his shoulders crouched; his bare feet were wise and silent" (10, p. 50). This appeared to be a simple, well-written, structurally balanced descriptive sentence of the boy as he hunted snakes and insects. To show that the idea could have been put less descriptively and less structurally balanced, I asked the students to write the same idea in other words. They were to make sentences of acceptable construction but ones that lacked the vitality of good description. Some of their attempts follow:

> He moved on his silent bare feet.
>
> Rich

> He was barefooted as he walked along, all crunched up.
>
> David

> He moved on with his knees bent and his shoulders crouched on his bare feet.
>
> Bill

> He moved on with his knees and shoulders bent. His bare feet moved in silence.
>
> Mike

> He moved on, with his knees bent and his shoulders sagging and his feet quiet.
>
> Tim

> He kept on going with his body bent up; he didn't have any shoes on.
>
> Joyce

The students voted Joyce's sentence as the dullest sentence of the day, though it was offered much competition! A simple exercise such as this one is a pleasant switch from the usual type of revision we give students--namely, to improve a sentence. The same principles are being applied either way, and equal thought must be given to both. The few students who struggled with this sentence and who felt uneasy about the exercise were the very same students who had not yet achieved ease in revising and reworking their own sentences; they still lacked confidence in pulling ideas and word structures apart to build newer and better ones. No matter how many exercises such as this one a teacher conducts, the objectives are the same--for the student to become more aware of a sentence both in its meaning and in its grammatical structure.

As a good example of this awareness of structure and meaning, one incident that occurred during class sessions on The Red Pony stands out. Often, when a student suggested an interesting sentence to be analyzed, I told them to get together if they wished with one or several others to share ideas. This method is invaluable as a way of generating new ideas that can be challenged on the spot by peers. The students usually gathered in groups of two, three, or four when left to their own resources, and almost always met with others of like ability. During one such session, Dan, Mike and Jeff were brainstorming in a huddle near a bookcase when suddenly, with characteristic vitality, all three tore up to the front blackboard. The sentence under consideration was this: "Jody heard the hoot owls hunting mice down by the barn" (10, p. 7). The student who had originally proposed this sentence for consideration felt that it was ambiguous. Jody could have heard the hoot owls while he himself was hunting mice down by the barn, or the owls were hunting mice down by the barn and Jody heard them. Most groups were going down the path of the reduced relative clause, and were offering the two sentences:

(1) Jody heard the hoot owls. (MATRIX)

(2) The hoot owls were hunting mice down by the barn. (CONSTITUENT)

In the case of the second sentence, the subject (hoot owls) and the form of be (were) were deleted or reduced, and then related directly to the first sentence by subordination. This notion predominated in the class. One group of girls, (Sally, Marilyn, Tammy S. and Joyce) made the valid observation that if one moved "hunting mice down by the barn" to the beginning of the sentence, thus making the sentence read "Hunting mice down by the barn, Jody heard the hoot owls," one could change the meaning of the sentence, yet still keep the relative clause. For a few moments then, we talked about restrictive and non-restrictive clauses.

Meanwhile back at the blackboard the three boys called me over to see what they had figured out. Their diagram looked like this:

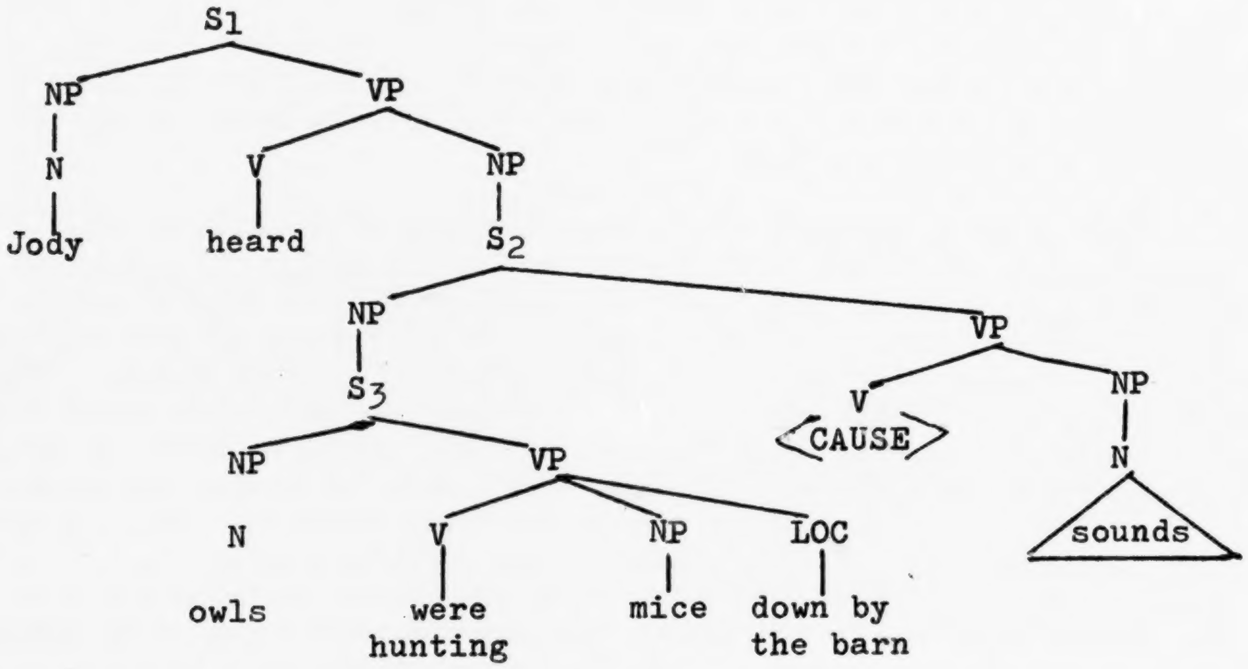

Figure 4

The boys proceeded to explain the diagram as we all crowded around to listen. Dan said that Jody couldn't really hear the owls hunting mice, for he could hear only the sounds that occurred as a result of the owls' hunting activities. Thus Steinbeck made the sentence interesting by stating that Jody heard the cause of the sounds rather than the sounds themselves. Jeff took over and explained that the object of the verb "hear" must be a sound word; any other object would be deviant, such as this one. Thus the object of "heard" is the whole cause-effect relationship indicated under S_2. Usually we bypass S_3, added Mike. In ordinary sentences we don't elaborate on the cause of every sound--we go right to the object, such as, "John heard the scream." Some event happened, causing that scream--this is represented by the S_3 relationship to the sound.

The boys' observations were valid ones, and typical of the type of thinking about language students can do once they have grasped a few logical principles. It is also typical, in a freer lesson like this one, that one or two groups will make some exciting discovery that they wish to share with the others. Questioning each other sometimes "shoots down" a theory, but the over-all value of creative thinking cannot be overestimated.

The third and final point, dealing with Steinbeck's complex sentence structures, will be touched upon only briefly. Over and over, throughout the story, students brought up Steinbeck's long, narrative sentences. A few examples are:

> After Billy had tilted his saucer and drained the coffee which had slopped into it, and had wiped his hands on his jeans, the two men stood up from the table and went out into the morning light together, and Jody respectfully followed a little behind them. (10, p. 8)
>
> Jody collected tail hair in a bag, and he sat and watched Billy slowly constructing the rope, twisting a few hairs to make a string and rolling two strings together for a cord and then braiding a number of cords to make the rope. (10, p. 9)
>
> Gitano only looked at him with resentful eyes, and he picked up the fallen deerskin and finally wrapped the beautiful blades in it. (10, p. 51)

Notably, each sentence follows a pattern we had studied at one time--that of narrative intersentential sequence of events. To select good examples like the above sentences, and to be able to recognize them as such, reveals an awareness and competence that I was happy to see in the class. The study of a well-written novel, in short, offers many opportunities for language study that can not only enliven a run-of-the-mill discussion, but also bring the students closer to the author and his style.

Advertisements

Although both the poet and the advertiser place a high value on communication, the poet wishes to portray an experience to the reader, while the advertiser aims to sell a product to the reader. The purposes for which each one uses language are considerably divergent; thus, including a study of advertisements in the two-year course provided an added dimension to the modes of language expression we had been studying.

Our attention was first drawn to advertising at the beginning of the second semester of the seventh grade. One student brought an ad to class which read in bold letters: "Are you an All-American nut nut?" and which displayed a picture of a peanut "wearing" football gear. The variety of implied meanings suggested by that statement were explored (including the one suggested by placing a comma between the first "nut" and the second "nut"), and soon other sentences from advertisements started appearing in class. Through a day or two of great fun and haphazard discussion, we discovered the eye-catching and mind-stretching appeal of good ads. We found that an advertisement usually achieved emphasis either by printing some words larger than others, by printing some words in italics, by underlining specific words or phrases or by using color contrast. The mind-stretching quality of particular lead sentences afforded several more days of exploration into grammatically deviant structures and meanings that we had not considered previously.

At the beginning of the "unit" on advertising, students brought many ads from magazines and newspapers to class for possible study. It should be noted here that the prime interest during that first experiment with advertisements was in the lead sentence. "What can we say grammatically about the lead sentence?" became the main question as days went by. We considered the ads randomly, one after the other, from the viewpoint of language "experts" who were trying to determine what grammatical deviancy or cleverness made each sentence an effective one in its particular setting. Gradually a list of general categories of devices evolved from this study; the sentences gradually began classifying themselves. It became a challenge then to find sentences that utilized more than one of these language techniques and also to find sentences that did not appear to fit any of our categories.

Working backwards, rather than in a time sequence, seems to be the most logical way to present these findings. I will begin with the list of categories as it emerged at the end of the study and illustrate each area with an example or two. We discovered the following devices in sentence construction to be those used by advertisers in order to call the consumer's attention to their products:

1. Rewording of a famous saying or familiar expression
2. Ambiguity of one word or of a whole sentence
3. Form of BE ending a sentence
4. Intentional syntactic deviancies
5. Homonyms
6. One word used as different parts of speech
7. Occupational words used for special effect
8. Alliteration
9. Animation
10. Root word used in several inflected forms

The old adage, "Haste makes waste," has become part of the American tradition. Capitalizing on this catchy phrase, one advertiser of cold remedies wrote the words "Haste makes sense" above a picture of the product. The change of one word, even in so short a sentence, calls the original saying to mind and the reader's curiosity is aroused to read further. The apparent dichotomy of "waste" and "sense" urges the reader not to waste time in using the advertised product. The word "haste" was also considered: it would seem to represent a state of implied, hurried actions that could "make" or cause either a sensible or wasteful result.

Another word substitution plus the use of an additional word can be found in this sentence: "All stereos are not created equal." The parallel to "All men are created equal" is evident. The class noted particularly that "created" and "equal" are key words which have been subtly re-defined to fit this new sentence. The creation of a man and the "creation" of a stereo are two very different things; the equality of men is posited on certain basic factors which cannot be applied in the same way to the category of stereos. The mentally jarring effect of the word "not" in this context has a certain shock value that causes the reader to re-evaluate the various brands of this product that appear on the market. The particular value of this device in sentence construction is found in the associations that the students are able to make, as well as in the subtle changes in word meaning from the familiar expression to the advertiser's sentence.

The category, ambiguity of one word or of a whole sentence, by far is the one in which the majority of our lead sentences were placed. The fact that each sentence has two distinct meanings because of the ambiguity usually means that one meaning is humorous or ludicrous when taken literally. One example from a hotel advertisement reads, "Keyed-up executives travel on their stomachs." Obviously the hotel management is trying to promote interest in the hotel's dining facilities (made explicit in the accompanying picture), but the picture of a man literally traveling on his stomach is a ridiculous one. Interestingly enough, the students wished to explore the idiom "keyed-up" as well.

The question, "What's really happening in China?," may evoke a number of political and international answers at first, but the rest of the ad reveals that a new type of dinnerware is now on the market. Just one word with two distinct meanings can cause the ambiguity. The same can be said for this sentence: "We have bigger words in our dictionary." The word "bigger" could apply to the size of type used in printing the dictionary or to the length and difficulty of the words listed in the dictionary. In this ad the meaning was the former one. Another ad (for raincoats) that reads "If you don't wear this coat, you're all wet!" makes use of both literal and slang meanings of the phrase "all wet," while a hosiery advertiser capitalizes on the multiple meanings of "run" when he writes: "Do your stockings run before you walk?" All of these examples serve to point out that for each meaning of a sentence, a separate deep structure can be determined, either by words or by diagrams. In this way relationships can be shown that justify the various meanings.

Usually any form of the verb "to be" is followed by another verb, an adjective or a noun, unless it takes on the limited meaning of "to exist" such as in Descartes' famous observation "I think, therefore I am." Occasionally in advertising we run across a sentence such as "The perfect shirt for kids who aren't." That the word "perfect" is logically implied at the end of the sentence can cause an interesting class discussion on when and how it is possible to supply missing words. Another example we used is "The average Swiss product isn't." One automatically places the word "average" at the end of the sentence when reading it, but then a problem arises. In the first example, "perfect" applied to shirts and "not perfect" applied to the children. In the second example, both "average" and "not average" modify the same noun, "Swiss product." How can it be average and not average at the same time? With a bit of thought and deeper exploration into the sentence, the class came up with both particular and general meanings of the word "average." As stated in the sentence, "average" applied strictly to the Swiss product. But the implied "average" carries with it a kind of "international average" that forces the reader to make a mental comparison of Swiss products to other products and come to the conclusion that the average Swiss product is superior to the average product of its kind. Class sessions got quite involved at certain times and this time was one of them.

One of the most clever and eye-catching devices an advertiser can use is to employ grammatical deviances in a sentence. One ad asks the question, "What are that?," to be answered further down the page by "That are a radio. Both of it." The radio part and the stereo part of this piece of equipment are separate, as illustrated in the picture. Discussing this advertisement in class brought to the conscious level what the students knew or had been taught about singular and plural agreement of nouns and verbs.

One raincoat ad provided another type of grammatical deviancy: "Rainfair gives you neat you never knew." "Neat" as an adjective is used in the place of a noun, so that connotations underlying the surface structure must be "a neat appearance," or a similar phrase. Changing the adjective "neat" to its noun form, "neatness," is another possibility. The purpose of considering these sentences was not merely to rewrite sentences we considered to be "wrong," but first, to examine the grammatical deviancy used by the advertiser; second, to determine the effectiveness of the deviancy; and finally, to look beneath the surface sentence to the deep meaning and logical structure from which the advertiser chose the words and phrases he wished to use in the surface structure.

The category of homonyms points up very clearly the difference between the spoken word and the written word. If someone were to say to you, "We would like to help you start a fresh heir fund," you most likely would think the person said "fresh air" fund. But when you discover that the "we" is an insurance company and the "fresh air" is really "fresh heir" or, in more common terms, a new baby, then the meaning changes drastically. The ambiguity with homonyms always rests in the spoken word but is clarified by the spelling of the written word.

The multi-meanings and multi-uses of some words in our language is focused upon in the category, one word used as different parts of speech. A word can be used in the same sentence as both noun and adjective, verb and noun, or even all three without changing the word's spelling or form in any way. In a hair spray advertisement we read: "Spray, spray, spray Pantene spray to your hair's content." The students had no difficulty in determining that "spray" is used the first three times as a verb and is used the fourth time as a noun. Sentences like this one appear to be uncommon in advertising, at least in the sample we studied. Any sentence of this type sharpens a student's sense of noun and verb characteristics if he has the opportunity to think about it. One student brought up the importance of punctuation in this sentence by noticing that if there would be a comma after the word "Pantene," all four "sprays" would be verbal: "Spray, spray, spray Pantene, spray to your hair's content." This observation revealed to me the student's basic understanding of noun and verb qualities--even in so simple an example--a basic understanding that must be present for any deeper grammatical explorations.

Under the category, occupational words used for special effect, I have placed several unusual ads. The caption for one ad we studied, though not a sentence, was most unusual: "Bunter, dobby, doup, gudgeon, gantry, heddle, tabby and thrum." The advertisement continued to describe the products which were various fabrics, carpets and wallpapers. Using the tools of a trade that most of the students were unfamiliar with enabled the advertiser to say much more than "buy the product." The strange words sent the students to the dictionary, thus helping them to become more familiar with and interested in the manufacture of the items.

Another ad along similar lines was a great favorite: "Here's the plot. A bit thin in places. (Enter TURF BUILDER, from SCOTTS, the grass people.) The plot thickens." The ambiguity of the "plot" is evident. However, the overall effect of the use of dramatic terminology justified, we thought, placing this particular ad in this category. The "plot" being "thin" or "thick," as well as the moment when TURF BUILDER "enters," creates a certain dramatic suspense. Not too many ads were found to fit in this category, but the available ones did provide worthwhile study.

Strictly speaking, alliteration is not a grammatical device. Sentences that do contain alliteration, however, usually are interesting ones since each word was carefully chosen. The "s" sound was popular in two advertisements we studied: "See stoneface smile" (coffee ad) and "He bakes them out of sea spray, sunlight and soul" (bakery rolls). In the first sentence the meaning of "stoneface" was discussed as well as "stoneface's" ability to smile. The second example was generally considered to be a very effective one--the alliterative "s" sound made the baking of dinner rolls almost a poetic event. The question of categorization was raised and considered at this time. Even though "sea spray, sunlight and soul" are all nouns, are they properly parallel? Normally speaking, it would be difficult to find a general category to include all three, but the alliterative, poetic expression of these nouns justifies categorizing them in this way. Certainly the baker needs more than sea spray, sunlight and soul to bake a good dinner roll. Yet in a poetic sense this sentence reveals the freshness of his product and the baker's own dedication--important factors in the product's quality. In this sense then the words could be categorized. Alliteration offers many examples of sentence deviances that might not be considered otherwise.

Advertisements that use animation prove to be good examples in the study of humorous dialogue. One product ran two ads in sequence, each ad picturing a bottle of malt liquor and a glass talking to one another:

A. Bottle: "Even if I cost just pennies more than beer, I look, taste and sparkle like champagne."

Glass: "You and your bubblier-than-thou attitude!"

B. Glass: "If you look and taste like champagne, how come you cost just pennies more than beer?"

Bottle: "You're only glass. You wouldn't understand."

Another ad pictures a pair of shoes, one saying to the other: "I hope he wears Byford socks today," as the other shoe replies: "Me too." An awareness of the use of dialogue and animation, as well as some notions of personification, can be effectively achieved through ads such as these.

Showing how an affix changes a word could become a mechanical task in the classroom if done merely as exercise and drill. However, identifying the root word and how a suffix changes its form and meaning was not purely mechanical when we did it with particular ads. This ad, for example, shows various inflected forms of "pick": "We're so fussy, we even have a guy who picks through the bananas picked by the guy who picked through the bananas the pickers picked." The two verb forms "picks" and "picked" were identified as the third person singular form and the past tense form of the verb "pick." The word "picker" was pointed out as one of the doer-occupational nouns--those that add "er" to the activity performed, such as bake-baker, farm-farmer, mill-miller. A similar example is found in this ad: "How much wood would a woodworker work if a woodworker worked for Dansk?" The word "work" is used as a verb in its simple form accompanied by the modal "would," as a verb in the past tense, and again as a doer-occupational noun "woodworker." The alliteration in the latter example was pointed out, as well as the effective use of the homonym "wood-would."

To summarize this aspect of the study of advertising done in the seventh grade, I would say the greatest benefit to the students was the language awareness it engendered. It was a rather painless way to discuss some details of language structure that needed to be pointed out. Since this was an exploratory type of study manufactured as we went along, I can look back and reflect that perhaps too much time was spent in pursuing some areas of relatively little value. However, this observation is, in itself, a learning experience and shows that an area must be tried before a judgment is made concerning its teaching value.

In the eighth grade I planned to do a more extended lesson with advertising. Since we had looked only at lead sentences the first year, it seemed appropriate to consider the whole ad in a framework of the psychological aspects of language use. Before examining the various ads in class, we studied and considered carefully advertising as a channel of communication conveying a message to the consumer. These messages to the consumer could also be called the purposes of advertising:

1. To make consumers aware that new products exist.
2. To inform consumers about such product attributes as features, usage, and price.
3. To develop a set of favorable consumer attitudes toward the products.
4. To create purchase intentions among consumers.
5. To stimulate purchases by consumers.
6. To help maintain consumer preference for the new products after an initial purchase. (11)

We also listed four levels of understanding that the consumer must be led through by the advertisement if the ultimate object of the commercial communication is a sale:

1. Awareness -- the consumer must first be aware of the existence of the brand or company.
2. Comprehension -- he must understand what the product is and what it will do for him.
3. Conviction -- he must arrive at a mental disposition or conviction to buy the product.
4. Action -- finally he must stir himself to action and buy the product.

The picture and the type of print along with every written word in the advertisements we looked at were given due consideration. The type of publication the ad appeared in also became important. Certain ads were found only in men's sports magazines while others seldom appeared outside of ladies' home magazines. For example, the comparison of a dandruff shampoo to the batting record of a famous baseball star attracted the boys. They found that this particular company ran a series of ads in which a star from almost every sport was featured followed by a sporty description of the dandruff shampoo. The white, pink and blue tube of shampoo and the colored photograph of the player in action both stood out against a black background. Bold white letters delivered the message:

> Can Head and Shoulders stop dandruff?
> Can Harmon Killebrew give it a ride?
>
> In the past seven years, "Harm" has averaged 42 home runs a season. Driven in 753 runs. He's second only to Babe Ruth in homers per times at bat. And 24 homers ahead of the Babe's pace at the same age.
>
> In the same period, Head & Shoulders shampoo has checked dandruff for the millions of men who've made it their regular shampoo. They like the way it gives dandruff a ride. The way it leaves hair clean, neat, and easy to comb. That's why Head & Shoulders has become America's #1 shampoo. Get with a winner. Head & Shoulders...the Killebrew of shampoos.

The psychological impact pointed up by brief, terse "masculine" sentences was a strong one. The boys discovered that the ad was attempting to transfer the admiration they had for the ball player to the shampoo and thus build up their admiration for both. The lead questions immediately suggest the parallel:

> Can Head & Shoulders stop dandruff?
> Can Harmon Killebrew give it a ride?

Note that in the ad the shampoo "gives dandruff a ride" and "is a winner." Any loose ends of the comparison are tied together with the closing statement of direct comparison: "Head and Shoulders...the Killebrew of shampoos." The principles of advertising that we had studied, along with the consumer's levels of understanding, were applied to this advertisement and found to be very effective.

Another series of ads made use of ambiguity in order to achieve its purpose. Each ad ran the length of a page and covered half the width of a page. Each ad made use of black print, both large and small, against a pastel-colored background that varied with each ad. Some of the lead sentences were "Smooth out family relation," "When you catch your husband red-handed...," "The bottle of the sexes," and "You've got a fight on your hands." The wording in each ad eventually led the reader to discover the value Dermassage hand lotion or moisturizing cream has for every member of the family. The theme of each ad brought in by the students seemed to be consistent, as they soon discovered. Each ad implied some problem in a person-to-person relationship where, in reality, the problem that existed was the presence of dry, rough skin. Another example of "humanizing" a situation through language was pointed up by Jim when he shared a cat food ad with the class. He brought out that the phrases "makes your cat happy" and "feed kitty's ego" both imply human qualities that a cat cannot have. Jim added that he knew someone who did treat a cat practically as a human being, so this type of ad, he felt, would appeal directly to such a person and be very effective.

The study of advertising in the eighth grade was a direct continuation of the work done in seventh grade. If I were to plan such a unit for the future (a great possibility), I most certainly would combine the work of two years into one unit. An exploratory type of lesson always takes more time and has its own type of value, but it can also provide as many "what not to do" factors, as well as examples that one wants to save for future use. The importance of advertising as a written communication cannot be over-estimated in a language study. Grammatical principles can be applied where needed to aid understanding. Most of all, it is an intelligent awareness of and respect for the intricacies of the advertising field in its psychological aspects that make such a study worthwhile.

This chapter has considered the student as a reader of language in three main written areas. Examining style and meaning through sentences, phrases or even word affixes can promote a conscious understanding of syntactic and semantic constructions. This type of study is worth the time and effort only if it enlarges the student's outlook and awareness enough so that he himself can express adequately his own ideas to others. A student cannot write from a vacuum--writing must be enriched by reading. The expansion of language through a greater understanding of the ideas of others will result, hopefully, in more thoughtful writing by each student.

COMPOSITION

As a teacher prepares his composition program during the course of a year, he considers first and foremost the students' needs, about which much has been written and much more needs to be written. Along with a study of good, idea-packed, well-constructed sentences in a literature program, I think a student needs to experience a consistent study and analysis of his own sentences in an accompanying program of composition. No matter what level the student has achieved, it is important that he be given the opportunity to understand how he writes as well as what he writes. Herbert Muller in The Uses of English writes that

> [t]he growing child naturally acquires a larger vocabulary and some control over more complex sentence structures, but also more awareness of different audiences and situations and some ability to adapt his writing and talking to different purposes; he grows more capable of handling abstractions, sorting his experiences into categories, and going beyond the concrete here and now to symbolic thinking; he grows more discriminating, capable of critical judgments of both what he reads and what he writes . . . . (12, pp. 45-46)

Thus, in my opinion, the focus of a writing program should center on helping the student to help himself say what he wants to say just the way he wants to say it.

Many students, whether in grade four or in grade twelve, are afraid to change even a word of what they have written; they do not have the same confidence in their written words that they have in their spoken words. Many very basic and obvious differences exist in spoken and written language but there is no reason why, when the former is natural and expressive, the latter cannot likewise be natural and expressive, though not in the same way. There are certain advantages in spoken language that do not exist in written language. To point out these differences between spoken and written language at this time is, to me, not a digression but rather an advantage. Sentences analyzed after or during a composition exercise are strictly part of the written language and must be analyzed by separate criteria.

Spoken language is man's primary mode of expression and his most vital and common means of immediate verbal communication. A certain facial expression or a particular tone of voice accompanying a sentence conveys the meaning of that sentence in a way that would not be possible in writing. In spoken language, words can be left out or slurred together, yet the listener readily understands what the speaker is saying. The fact that words can be emphasized strongly by vocal stress and pitch or by an accompanying action or facial expression almost eliminates the possibility of unintentionally ambiguous sentences. Slang and familiar expressions may usually be inserted comfortably into spoken language along with certain sounds that aren't really words, but that serve to emphasize the event described. Grammatical errors are not so obvious in spoken language as in written language; glaring errors most often made are those of incorrect usage rather than those of sentence structure. In addition to these features, my students have observed that they can communicate more in less time by speaking than in writing. They also have noted that their spoken vocabulary exceeds their written vocabulary in that they can say words they cannot spell. One boy further stated that "you don't have to cross out mess-ups" in spoken language, which is to say that mistakes may be more easily rectified in speech than in writing.

With all of the above advantages found in spoken language, written language seems to take a second place. In a sense, writing is secondary in that words written on paper are only symbols of the sounds which, when spoken together, express an idea. Writing comes second in the developmental language process and normally takes place only after a certain degree of mastery is achieved in the spoken language. Growth in both spoken and written language should coincide and complement each other in the whole development of verbal communication. Written language can neutralize any pronunciation differences in a language very effectively. Somehow, no matter how informal the content, written language often tends to be a bit formal. And rightly so, perhaps, for the writer has the opportunity to think about what he is to write, to pause in the middle of a sentence, and to revise or delete material before any direct communication is made. Thus the writer can be more careful about sentence construction and word choice, especially if he wishes to avoid ambiguities that may arise. Written language allows ideas to live for generations; but if a word is only spoken, it can be neither retrieved nor preserved.

It is obvious, then, that a student's growth in writing must be commensurate with his growth in speech. Yet in most cases this is not what happens; students often dread writing and become "formal and phony" as one of my students so aptly put it. Students in junior high often write the same type of sentences they wrote in the fourth grade: either short, clipped sentences or long sentences unmercifully linked together by ever-convenient "and." Many students are reluctant to revise or to start over, even though they admit that they could develop an idea further or express a point better. Why is this? Why do so many students continue to be crippled in their written language experiences? How can they be helped? In answer to these questions, two important considerations emerge from my experience: first, what the students write must be of value to them--they must have a desire to express their views or describe an activity, not just be given a topic to write on in a few hundred words or less; second, close examination of their own writing methods and sentence structure enables students to determine, individually, any area in which they need improvement. In the following pages I shall attempt to describe these two considerations as a basis for relating my experiences with students in terms of what they write and how they write it.

Concerning the first point, the content of writing, I agree strongly with the current trends in composition teaching that advocate student-centered topics. The recent work of James Moffett is an example. In A Student-Centered Language Arts Curriculum: Grades K-12 (13) and its companion book, Teaching the Universe of Discourse (14), Moffett posits a developmental approach and combines written language experiences with spoken language and various non-verbal communication experiences. This truly is a student-centered approach.

I can recall times in the past when I would assign a topic--which usually turned out to be the title of the composition--and expect the paper to be "written in ink on good paper and handed in at the end of the period." Occasionally this might be an overnight assignment, but not too often, because I didn't want students to copy one another's "original" ideas! Reading 30-40 papers on the same topic often left me with the thought that original ideas just didn't exist in students' minds or if they did, the students were not capable of expressing them. Somewhere in those first years of teaching I discovered the obvious--that students would have more to say if they had a choice of what to say. Not every student can respond with the same interest to any given topic. So I began to give three or more topics to write about (very liberal, I thought, at the time!)--topics of concrete here-and-now interest to students, not topics of abstract past or future intangibles.

Gradually through the years a writing program has developed from which I draw ideas according to the abilities of the students and which is supplemented by new insights every year. Each year every class is different, but every time I approach lessons in written work the basic theories remain the same. My first concern is to find out what the students truly know and are interested in. The what of composition should be of primary importance because whoever writes without a message to convey or without an experience to share is wasting his time. The what of a composition may seem insignificant to some readers, but it is not insignificant to the writer and should not be to the potential reader he envisions. If a student is able to write a sentence, he is capable of thinking about many things; he has only to choose from a backlog of experiences or to take a side on a contraversial issue.

A writing assignment needs to have a purpose; otherwise, it should not be assigned. To see how students can write and to get another grade to average in for the quarter are less than praiseworthy motives and, in my opinion, a total waste of time. A teacher may say, "But every Friday is composition day!" to which I would be tempted to reply, "So what?" Handing in the weekly composition can all too easily turn into unconscious routine drill work. If there is no purpose to a composition exercise for a week or even for two weeks, then a writing assignment need not be jammed in just because it's the customary thing to do. Ideally all the students would be writing all the time on their own and, given a purpose, a few of them may actually do so. I take "purpose" to mean a conviction in the writer that the topic has value in some way and that it deserves to be shared with one or more readers. Whether the idea is weighty, frivolous, simple or complex makes no difference. If it has relevance to the writer then the first step has been taken.

At this point a teacher finds himself in his true role as guide and developer. What if a student's ideas are shallow, unimaginative and, when objectively viewed, lacking coherence or even logic? Let the student write freely anyway--it's the only way to uncover his pattern of thinking. If a teacher is sensitive to the student's need and potential, he can try to guide that student's thinking into deeper channels by building, not by tearing down. From observation, I would say that what students need most in order to develop their written language ability is confidence that they have something to say that is worth reading; it's hard to have confidence when papers are handed back dripping with red ink and labeled with D's. If this is the pattern, then the student's writing development stays on that same level all year; perhaps it even regresses. When composition work is always graded on a "right or wrong, A-B-C-D-E" basis, the fear of being on the "wrong" side is great. One way to avoid this stifling tragedy from the very beginning is to be concerned only with what the student is writing--the how can wait for a while.

Most teachers today undoubtedly see the wisdom of giving the first writing assignments in a liberal, personal framework of the student's own experiences. Whether a student narrates an adventure or makes one up, whether he argues a point or reflects on an issue--the beginning work is very revealing. I usually spend a good deal of time setting the stage for a writing assignment, since there is nothing worse than giving topics in a vacuum. Results are usually as empty or as exciting as the interest generated by the topics assigned. Most of my writing assignments have originated in class discussions during which we evaluate the topics and list them on the board. Verbal sharing of ideas on the decided topics can help the slower-thinking students and stimulate the faster-thinking ones to move deeper more quickly. In an exploratory assignment such as this one, I would read several samples of experience essays I've saved from students of past years. This latter activity serves many good purposes: it shows the students what other students think about, it expands the students' range of interests and, what is very important, it emphasizes the fact that the teacher values student writing and regards it as important in its own right. With such encouragement, along with a few beginning-middle-end basic reminders, most students will be eager to write the first composition.

Instead of immediately attacking the stack of papers with the traditional red ink and comments, I find it useful to set the stage for reading the compositions. I say "reading" deliberately rather than "correcting," even though it is difficult at first not to circle those misspelled words, not to underline that dangling participle or not to write "awkward" in the margin next to an uncategorized series of events or objects. The how must wait. He should first merely read and comment, find a good idea, if he can, for the student to develop the next day on paper, suggest a reference or story that would help to expand a budding interest--anything to guide and encourage. Hopeless students do exist, but they are few and far between; belligerent students who may try to take advantage of a positive attitude by producing a minimum amount of work do exist too, but in very small numbers. Once an assignment such as this one is repeated several times and returned ungraded but with thoughtful and respectful comments, the students should be more receptive to the various formal or informal compositions a teacher may require during the year.

After the beginning assignments, a teacher can give his students ample experiences throughout the school year to write real or fictional narratives, as well as evaluative or opinion essays. The writing program may follow a specific planned pattern or a loosely-knit one. Whatever is the case, each essay should have a purpose for being written. Class discussion of vital contemporary issues as they relate to human values can be very rewarding stimuli for student composition. In this instance, the student often forgets his last remaining fears of written expression and writes avidly. Any thinking youth with any energy at all will grab a cause and fight for it from one side or the other. An argumentative or opinion essay needs time to ferment, perhaps even more discussion, and these even more than other papers should not be demanded in an hour's time. The student should be given a chance to put his best foot forward, to put himself into his words as best he can, with time to ponder and to revise. A student may want to hand in a rough draft first--I usually require this in the beginning stages of studying how a paper is written.

Ideas on what to write abound in handbooks for English teachers and most probably in every English teacher's notes somewhere. No area of written expression should be overlooked at any age--students must write, write, write and, if given a supportive atmosphere, will enjoy it. Some students will like descriptive writing or character sketches more than reflective pieces or abstract observations. Many will enjoy writing dialogue and eventually will move into story-writing. Some will be taken with poetry and will experiment with various techniques. Science-fiction and the supernatural will appeal to some while journalistic evaluations of favorite books will attract others. There is always a student addicted to humor and puns, with which his writing will then abound. Sitting right next to the gag-writer might be a boy whose sole interest in writing is in its value for recording scientific happenings. As he allows freedom of topic to each student, a teacher will discover not only the particular interest of that student, but also the student's own unique style which emerges as soon as a natural flow of words on paper can begin. Again, the teacher's role as guide and developer is important here, because the teacher can determine with each student the style his writing usually takes and can help him to develop this. A student whose vision is too narrow can be led by the teacher to explore the many avenues writing may take without at the same time denigrating the particular ability that student does have. This interest in what each student writes leads into the next major topic for consideration which is related directly to the grammatical activities of a language program--how a student writes.

Students can and should view each sentence they write in the same way they view a sentence of a great poet or prose writer. If a student can determine what makes a great sentence good, he is capable of determining what makes his own sentence good--or not so good. Students can and should gain confidence in taking apart their own sentences, rearranging words, and adding or eliminating words as necessary in order to express the idea they wish to convey in the best way possible. Because the major objective of any grammatical study I presented in the English class was a greater understanding of the way sentences are put together, it seemed logical to aid composition work by language study. Conversely, the use of student models to explore particular grammatical principles has a strong appeal to the students. Even when one of his sentences was chosen to illustrate a glaring error, the student usually considered it an honor to have his sentence chosen for class study. At any rate, the appearance of certain grammatical errors in sentences from composition work made such an approach not only feasible but also rewarding.

Various kinds of sentences were taken directly from student compositions. Many of these sentences were used during lessons in which I wanted to point up a particular area of grammatical thought for the class as a whole. Each student searched his own compositions as well, in order to personally identify grammatical deviancies that he wanted to revise. The sentences used as examples on the following pages are, unless otherwise indicated, student sentences that either were explored in class collectively and revised or were handed in by the student as individual study and revision. These sentences I have grouped under seven general headings for discussion here. Student sentences that will be considered are of the following types:

1. Sentences that contain an expansion of parts--category expansion from both syntactic and semantic viewpoints.
2. Sentences with the "and" problem. Intersentential conjoining efforts are made as well as subordination of clauses.
3. Sentences that reveal problems with pronouns--antecedents of relative pronouns and number of personal pronouns.
4. Sentences that show the incorrect modification called "dangling participles."
5. Sentences that convey unclear ideas through repetition or excess wordage. Some may be semantically muddled or ambiguous and not necessarily syntactically malformed.
6. Sentences that are grammatical but dull. These sentences are acceptable in form and meaning but lack vitality.
7. Sentences that are unusual in structure or meaning. A study beginning with the surface structure of such

sentences often proves informative and interesting.

The understanding of the use of "and" in predicate expansion or in category expansion seemed crucial if the students were to make any progress in better understanding what goes into the making of their own sentences. Consider one of Bill's sentences, for example, that I used as the first example of a sentence in which expansion of parts could be improved:

> Mike Connors of the 'Mannix' series is the person I would most like to emulate because I would like to be a private eye and be like the hero type and know judo like he does on the show.

Where does a class discussion begin with a sentence like this one? I often wonder the same thing myself sometimes. That is why I planned ahead enough to know that the purpose for which I was presenting this sentence was to identify the category and to clarify the parallel structure. The first response to my question about the possibilities in this sentence provoked an attack on the use of "like" four times. "Like" is used in two different ways in this sentence; as a verb meaning "to want or wish" and also as a vehicle of comparison. Because of this confusion along with the general confusion of meaning, the students were critical of the sentence as a whole until Sally observed that there were a lot of good ideas in the sentence in spite of its mixed-up appearance. Her observation set the stage for the real discussion in which students identified elements of the sentence and objectively considered possible revisions that would make the sentence grammatically acceptable.

Everyone agreed that Bill wanted to be like Mike Connors of the Mannix series for three reasons. These reasons could have been expressed more effectively had Bill stayed in the category of either NP or VP. After a whole session of intuitively figuring out this principle, each student rewrote the sentence for the next class period. Some chose the VP category so that the sentence looked something like this:

> Mike Connors of the 'Mannix' series is the person I would most like to emulate because I would like to be a private eye, be a hero, and know judo as he does (or is) on the show.

Note that "like" and "as" were used arbitrarily by the students. The problem at the end of this sentence was resolved by one student who replaced "be" with active verbs:

> . . . I would like to work as a private eye, portray the hero-type and know judo like he does on the show.

The three activities Bill admired came through clearly with parallel Verb Phrases:

1. Work as a private eye

2. Portray the hero type

3. Know judo

Other students revised the three elements into Noun Phrases:

> Mike Connors of the 'Mannix' Series is the person I would most like to emulate because I would like to be a private eye, a hero and a judo expert like (as) he is on the show.

The problem of "like (as) he is (does) on the show" at the end of the sentence was posed several times: does this comparison refer to all three activities or accomplishments of Mannix or only to the third activity, that of knowing judo? No definite proof could be found that would provide an indisputable answer. At times like these, the author of the sentence can state what he meant to say since, in this instance, two interpretations could be made. It has happened on occasion, when a student explains the meaning of his sentence, that his intended meaning will differ greatly from our understanding of the sentence. Time taken for the explanation of a sentence is a worthwhile pursuit which sometimes graphically illustrates how difficult it is "to say what you mean" in writing. Bill had intended that "like he does on the show" refer to Mike Connors' judo activities only. Note the subtle difference in meaning when the phrase refers to all three noun phrases.

It happened that in this sentence the activities of Mike Connors not only were classifiable as Verb Phrases or Noun Phrases but also were classifiable according to meaning. All three activities or states related to one another: they fit together to make a more complete picture of the man's abilities. I put another sentence on the board--one of my own--which contained three adjectives parallel in structure but not in meaning:

> Mannix is smart, friendly and bald.

Knowing what they did about parallel structure, the students accepted the sentence but kept insisting that "bald" didn't fit. It was at this point that their notion of categories began to deepen. "Bald" is something you can see, Dan observed, while "smart" and "friendly" are qualities of mind and spirit. All agreed that the over-all meaning of a sentence can be destroyed by mixing qualities that do not belong to the same category.

As the members of the class became aware of parallel structure in sentences, they tried very hard to write their own series of activities, events or qualities in the clearest way possible. In a later essay, Jim wrote about a friend whom he admired very much:

> He knows German, is writing a book and can type sixty words a minute.

Jim was famous for his run-on sentences that never seemed to end, as well as for a general incoherence at times in his writing. The above sentence, with its parallel Verb Phrases, was put on the board at Jim's suggestion. He was proud of the clarity in the sentence but he also knew that "the verbs weren't the same," (knows, is writing, can type) and wanted some ideas for revision that wouldn't destroy meaning. There followed a fascinating lesson on how exact parallel structure can drastically change the intended meaning. David suggested "knows German, writes a book and types sixty words a minute" as being the easiest way to revise. "Writes a book" doesn't really mean anything, countered Rich, since the person is in the actual writing process. "Is writing a book" implied, for Rich, that the thinking and putting ideas down on paper had already begun, and the intention was to bring the pages together in book form when the writing was finished. The writer started and has not yet finished--he is in progress, thus the need for "writing" to be in the progressive present form.

The other students seemed convinced by Rich's point as they nodded their heads in agreement. Tammy suggested that the sentence read "He is knowing German, is writing a book and is typing sixty words a minute." Immediately, disagreeing voices were heard: "He already knows German, he's not in the process of knowing it--that doesn't make sense!" "He's not typing right now, he can type sixty words a minute, but the sentence doesn't say he's actually doing it." That solution, too, was rejected. The third alternative, "He can know German, can write a book and can type sixty words a minute" was likewise rejected on the grounds of meaning. There was nothing potential about his knowledge of German or his writing activities. The question that finally was formulated after these attempts at revision was this: Why can't these verbs be written in parallel form without changing the meaning of the Verb Phrases?

Again the search for meaning became crucial. Categories of meaning must be established as well as categories of structure or parts of speech. In the discussion that followed, two areas of classification were uncovered: first, some verbs describe mental activities while others describe physical activities; and second, facts and events cannot be classified together. Dealing with the first concept, the class decided that "he knows German" is strictly a mental activity, expressed by the verb "know." "Can type sixty words a minute" is a physical skill or activity since it involves a great deal of motor skill. True, one must think to type but one must also practice talking to know German; therefore, whether an activity is mental or physical depends upon its actual performance, not what preceded that performance. "Is writing a book" was debated for a while as to whether it was a mental or a physical action. The decision was leaning heavily toward "mental activity" until Joyce convincingly pointed out the necessity of the actual written work involved. This Verb Phrase was classified finally as a combined mental-physical activity. A search for classification revealed to the students why it was not possible to write the three verbs in the same form while retaining the exact, original meaning. They were willing to allow both mental and physical skills to be classified together in a sentence describing a person's capabilities and could provide several worthwhile examples. Their concern over "is writing a book" led into a lesson about facts and events (15).

In general, the class discussion established that an event exists in space and time; it concerns things or people in motion. A fact, on the other hand, is about these events or things in motion. A fact is derived from an event and is specifically cognitive--behind every fact there is an event. Applied to the problem in this particular sentence, these principles show that "is writing a book" is eventive, not factive as the other two activities are. The subject is in the midst of the event of writing a book and the author of the sentence relates that the event is occurring. That "he knows German" and "can type sixty words a minute" are facts no one would dispute. Certain events had to take place which disclosed a knowledge of German; therefore, Jim could write "he knows German." Too, the event of actually typing sixty words a minute had to occur some time in order to state "can type sixty words a minute" as a fact. Jim had not bargained for such thoughtful pursuits when he originally asked his question concerning parallel structure. But over the period of several days both the class and I enjoyed trying to think deeply about some of these things that had never occurred to us before. I did not have preconceived answers--I had had a few ideas about the subject--but the way in which we pursued the topic left all areas wide open for speculation. The ideas I did have, particularly those concerning facts and events, helped to guide and focus the discussion at times; that is the role of a teacher in an inquiry session.

To expect every student to write perfect sentences in parallel form, even after an enlightening discussion on categories of meaning, would be asking too much of human nature. It's a beautiful ideal to strive for, but failure to achieve it is not worth worrying about since each student will master whatever skills he can when he is developmentally ready for that skill. A week or so after the big discussion I found this sentence on one of Pat's papers:

> I suppose every boy in this room hopes some time in his life of playing major league baseball and getting on T.V. and getting your name in the paper every night.

An instant shudder later, I asked Pat if he would mind our looking at this sentence in the class-at-large, a suggestion to which he readily assented. After reading the sentence from the board, Chris (always a discreet person) commended the use of parallel ING verbs but suggested that the "of" is awkward and "your" should be "his." Pat himself changed the "of" to "to," thus automatically changing the verbs from their ING forms to their simple infinitive forms. Everyone seemed pleased with the sentence in its new form:

> I suppose every boy in this room hopes some time in his life to play major league baseball, get on TV and get his name in the paper.

Objecting to "get," Teri suggested that "be on TV and have his name in the paper" sounded better. Just as we were turning to the next sentence, Jeff proposed that he did not think these three ideas were parallel in meaning. He felt that the first activity, "play major league baseball" was the cause of the next two activities. Being on TV and having one's name in the paper most likely would not occur unless the first activity caused them to take place. With this observation, Jeff was introducing a new topic, that of subordination, which will be discussed next. It often happened that a new area of interest or problem presented itself just as we thought one was solved. I like to think that as we probed more deeply into the nature and workings of language we kept unlocking the doors that had prevented our understanding of logical relationships in the past.

Before going any further with the "and" problem and subordination, I would like to include here some of the individual sentence revisions my students handed in during the course of the year. Whenever we did any composition work, the usual procedure was, as mentioned before, to find a sentence or two in the rough draft that could use revision for one reason or another. On a half sheet of paper, the students would copy the sentence, tell what could be improved and finally, rewrite it. These half sheets were easy to check over and provided a basis for individual help for each student. Consistent errors cropped up--errors that the student could see only after he noticed how many half sheets revealed the same thing. It is from these sheets that the following sentences were taken:

1.* OLD--She is Korean has black hair and eyes.

This sentence makes you think that the nationality and hair are in the same category. I meant that the eyes are black too, not just the hair. She is my adopted sister.

REVISED--My adopted Korean sister has black hair and dark eyes.

Jim

2. OLD--You will learn the habits of your pet and its needs.

I just stuck on "and its needs" at the end. It could sound better.

REVISED--You will learn the habits and needs of your pet.

Jeff R.

3. OLD--Then one day the servants took her up to this one room where all the pictures were covered; and the bird cages were opened and the room was cold.

The sentence doesn't say who "her" is and the room being cold doesn't fit in with the other two ideas.

REVISED--One day the servants took the girl to a cold, damp room where all the pictures were covered and the bird cages were open.

Rich

Occasionally I would receive a half sheet labeled "Good Sentence" which a student was proud of having written. Both of these sentences came from the "Good Sentence" pile:

4. OLD--Both of them were outsiders, Daisy because she was poor amid such wealth and Richard because he was rich amid such poverty.

Daisy and Richard in this sentence are parallel in one way because they are both outsiders. This is shown in the parallel form of the sentence. The difference between them is in the words.

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*Student sentences will be numbered consecutively throughout Part II.

REVISED--None

Sally

5. OLD--Her daughter had died and the lady was so grieved that she stopped going to Mass, hid all the things that would remind her of her daughter and considered all holidays just like regular days.

This shows three things the lady did after her daughter died that are sad things.

REVISED--None

Mike

Throughout the two years with this class I feel that the time spent on parallel structure and category expansion was very worthwhile. This was one major activity that produced an understanding of logical relationships that seems to have affected the students' thinking about language.

Another even more complex grammatical problem that my students had a need to explore was intersentential conjunction. This differs from category expansion in that whole sentences are joined together by a conjoiner.* Category expansion deals only with specific elements or parts of a sentence. Many sentences written by students are connected for the sake of convenience by "and" in order to make them longer. We began to notice that there are several distinct meanings that "and" can have when it joins two separate ideas in one sentence. Instead of using student models in order to determine what these different meanings could be, I asked the students to bring to class sentences from books they had read for the group to analyze. By adding a word after "and," we distinguished its function in relating sentences to one another and came up with several consistent relationships. The three main conjoiners I will discuss here are the narrative conjunction, "and then," the causative conjunction, "and so," and the concurrent conjunction, "and also."

The first of these conjunctive meanings is "and then," which indicates a narrative sequence of events. Consider these two sentences:

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*In later refinements, category expansion includes sentence-expansion as well as NP-expansion and VP-expansion. There is no reason to arbitrarily exclude EVENTS from category expansion just because the characteristic syntactic representation of EVENTS is the sentence. At the stage of the project being described here, though, sentence-expansion was considered a separate phenomenon.

> Prove that, Mr. Holmes, and I am your debtor forever. (16)

> I got all my traps into my canoe again so as to have them out of sight and I put out the fire and scattered the ashes around to look like a last year's camp. (17, pp. 468-469)

Both sentences demonstrate the narrative conjoining of ideas. In the first sentence an if-then relationship is set up--the second idea is totally dependent upon the performance of the first. If Mr. Holmes proves X, then the speaker will be his debtor forever. The fact that this if-then relationship places the whole sentence in the realm of possibility does not destroy the sequence of events. The proof must take place first, before the indebtedness can occur. "Then" can be placed logically in the sentence so that the entire sentence reads:

> Prove that, Mr. Holmes, and then I am your debtor forever.

The second sentence above also indicates an "and then" relationship. Huck narrates the sequence of events that took place as he broke camp: "first I did X and then I did Y and then I did Z." Three separate activities, each a complete sentence in itself, are conjoined by the "and then" relationship:

> I got all my traps into my canoe again so as to have them out of sight and then I put out the fire and then scattered the ashes around to look like a last year's camp.

Briefly, the "and then" conjoiner signifies a time sequence of events, one taking place after the other.

A second meaning for "and" as a conjoiner is one we called "and so," a causative conjoiner. "So" can be replaced by "thus" or "therefore": "X happened, and so (thus, therefore) Y happens." A definite causal relationship is set up in the realm of actuality. Note that the sentence above that contains an "if-then" relationship likewise finds a place in this category too, since the first half of the sentence would cause the second half. Another example of an "and so" conjunction is the following sentence:

> The only way to take one's mind off it all is to study, and I do a lot of that. (18)

In this sentence, Anne Frank believes a particular fact, which causes her to perform the specific action in order that the event might take place:

> The only way to take one's mind off it all is to study, and so I do a lot of that.

It seems that we can only know facts, not events. In order for an event to be thought about, it must become factive. Several events must have occurred in time to cause Anne to know that she could "take her mind off it all" by study. In the framework of causality, only events can cause events; however, every event must be factivized before it can be thought about. Once an event has been factivized, i.e., thought about, it can become the starting point for another cause-effect relationship, for the belief in the fact of one event can cause another event: someone performs in a particular way because he believes X to be so.

The third intersentential conjoiner is the concurrent "and also" conjoiner. This conjunction connects two separate but related events and indicates that both happen simultaneously. Event X does not occur after event Y; nor does event X cause event Y to happen. The following sentences will serve as examples:

> The boy watched him pivot on the good leg and saw the stiff foot drag around the arc of the turning, leaving a final long and fading smear. (19, p. 229)
>
> The old man carried the mast on his shoulders and the boy carried the wooden bar. (20, p. 15)

The boy in the first sentence is observing an event that contains two elements of action--the activity of the man's good leg and of his bad leg. The man is pivoting on the good leg and at the same moment he is dragging the stiff foot in an arc as he turns. Both actions occur simultaneously; in this situation one would not happen without the other. Pointing up these two details is accomplished by stating each activity separately and drawing the boy's attention to each leg, "the boy watched . . . and saw . . . ." The intersentential "and" could be expanded, then, in this sentence:

> The boy watched him pivot on the good leg and also saw the stiff foot drag around the arc of the turning, leaving a final long and fading smear.

Note that a subtle distinction here from category expansion can be made: the meaning of "watch" implies an intensity of looking that is not found in "saw." Considering these two as separate activities allows for the intersentential conjunction.

The Hemingway sentence above is more obviously concurrent in that two separate agents are performing two separate actions; thus there can be no doubt about these being two separate sentences. When "and also" is inserted in place of the surface structure "and," the sentence appears to be awkward. However, the relationship of simultaneity is still present:

> The old man carried the mast on his shoulders and also the boy carried the wooden bar.

The old man's activity does not precede the boy's as in a narrative time sequence, nor is the boy's activity caused by the old man's in any way.

The whole purpose for examining the intersentential use of "and" was to better enable the students to identify exactly the relationships they wished to convey in their own sentences. Most of the time, a student could, by analyzing his own sentence, improve in his method of connecting one idea to another. It often happened that an intersentential "and" was not called for in a sentence and the use of "and" produced a run-on effect. After identifying the "and" as the problem and finding that he did not want to convey any of the above conjunctive relationships, the student logically turned to subordination of ideas. Even in cases in which the "and also" relationship existed, for example, the students gradually came to see that the subordination of one activity or event to another can give an added prominence to the idea they wished to emphasize. By studying the use of "and" in the above way, students could see that it is not wrong to use "and." Indeed, many famous writers express their ideas very well this way. From past experiences I have found that, since they could not discern the logical use of "and" in a sentence, students had become afraid to use "and" for fear they would be creating the dreaded run-on sentence. The ability to think about a sentence he has written in more sophisticated terms is a big step forward in a student's gaining confidence in his own power of written expression.

Among the sentences revised on half sheets and turned in by the students, many centered around the problem of "and." One student whose writing notably improved was Tim. Two sentences he handed in dealt with interesting revisions in this area:

6. OLD--Two days before Christmas I was looking at the graves in the graveyard and saw a grave that was more worn and I couldn't read the name.

> The last part is just stuck on and I didn't say what the grave was more worn than.
>
> REVISED--Two days before Christmas I went into the graveyard and saw a grave that was more worn than the others. I couldn't read the name on it.

Tim identified the "and" in the revised sentence as a narrative "and then." The action of going into the graveyard preceded his seeing the worn grave. The short sentence is very effective at the end. It takes on the importance it should have not only as an added detail of description but also as a positive attempt of the writer to identify the grave.

Tim's second example shows a dramatic reduction of words in order to show the meaning more clearly:

> 7. OLD--The people couldn't see us because of the darkness and the dark shadows of two big hemlocks by the gate added to the darkness.
>
> I repeated the darkness too much.
>
> REVISED--The people couldn't see us because we stood in the dark shadows of the two big hemlocks by the gate.

Dropping the "and" along with the redundant "darkness" in this sentence enabled Tim to state his event simply, "the people couldn't see us," and subordinate the cause of that event.

One sentence of Bill's uses "and also" until he revised it:

> 8. OLD--He was the first friend I had and also Janie, his sister.
>
> It leaves the part "Janie, his sister" hanging in the air.
>
> REVISED--He and his sister Janie were my very first friends.

Bill does not have an intersentential conjunction here at all, as he first thought--the revision shows him the problem was in category expansion, namely, the listing of two friends.

Chris had difficulty with this sentence at first by trying to connect past and present ideas:

> 9. OLD--His brother had been killed before him and

> also this was a time of revolution of many troubled minds.
>
> I want to connect these two sentences better. One really caused the other.
>
> REVISED--This is the time of revolution in many troubled minds, resulting in assassinations of famous people, including Robert's brother before him.

Chris points up in her revision the state of mind that caused the particular events of assassination to occur. It seems that "and also" can be used only to conjoin two facts or two events; it cannot conjoin an event to a fact.

One of Bob's sentences is:

> 10. OLD--Lincoln High was leading 21-0 and it was the last quarter.
>
> The "and" doesn't have to be there.
>
> REVISED--Lincoln High was leading 21-0 in the last quarter.

Bob recognized the presence of an adverbial of time by changing "it was" to "in." The prepositional phrase answers the question "when?" more clearly than the entire original sentence. Bob realized there was no narrative sequence, causation or concurrent activity to justify using "and" to connect the two sentences. Category expansion was ruled out too. In cases like this one, the student has a good clue to seeing that perhaps he should not have used "and" to begin with.

Another sentence in which "and" was changed is Marilyn's:

> 11. OLD--John walked down the hall and took the disappearing solution out of his pocket.
>
> I could write it another way.
>
> REVISED--As he walked down the hall, John took the disappearing solution from his pocket.

We said very little about subordination in formal terms during class sessions. Marilyn evidently recognized the simultaneity of these two actions of John since her revised sentence keeps the actions concurrent. However, the use of the subordinate "as" clause emphasizes the activity of taking the disappearing solution from his pocket as being more important than the activity of walking down the hall.

Sometimes changing an independent clause to a subordinate clause can clarify meaning, as in one of Sally's short sentences:

12. OLD--Tony didn't play again all night and Lincoln won 14 to 8.

It doesn't say what I mean. The sentence makes it sound as if the team won because Tony didn't play.

REVISED--Even though Tony didn't play again all night, Lincoln won 14 to 8.

The causative "and so" was the only possible interpretation to Sally's first sentence--a fact she realized when revising the first draft. By eliminating the "and" and supplying the appropriate adverbial introduction, Sally clarified the meaning.

Contrast is a factor that cannot be overlooked when talking about conjunction. Most children seem to have no trouble with contrast (but, yet, ...) but an example could be given from the revision papers:

13. OLD--Tony looked at his hand and it had vanished. The "and" should be "but."

REVISED--Tony looked at his hand but it had vanished.

The use of the past participle "vanished" along with the auxiliary "had" indicates that the second action took place at some time before Tony looked at his hand. Joe knew that both events had occurred, but not at the same time. The second action does not follow the first, either in time or as an effect. The contrast shows that the second action actually took place first in time, showing a reverse of the narrative sequence "and then."

The greater insight a student can have into the problems of "and," the easier it should be for him at least to begin to organize his thoughts with better logic and with consistency.

The fact that pronouns repeatedly cause problems in sentences is a good reason to include their correct function in any grammar program. Rather than isolating this study, though, I found it very effective to make the points that needed to be made with student sentences as models. By a careful study of the students' compositions over a period of a few weeks, I came up with three main errors that students consistently make when using pronouns. Interestingly enough, in the revised sentences on half sheets that they handed in, the students identified basically the same problems. Thus instead of spending a few days here and there studying kinds of pronouns and their rules for use in an isolated fashion, we explored these three areas only: first, relative pronouns that introduce subordinate clauses; second, the agreement in number of personal pronouns with their antecedents; and third, the ambiguity or lack of meaning of an unidentified pronoun.

When a student uses a relative pronoun to introduce a subordinate clause he evidently does not always think of the noun the relative pronoun stands for. Some student sentences suggest this observation, though by far the majority of relative pronouns are used correctly. In trying to show not only how the subordinate clause is related to the main clause but also how relative pronouns are used effectively, I have found the Wh-transformation to be a simple but valuable tool. Before giving a student sentence to the class to think about, I put this sentence on the board to introduce the idea:

> Snakes in the swamps which are poisonous should be avoided.

Student reaction was immediate. I was told that the snakes were poisonous, not the swamps, and that "which are poisonous" should follow "snakes." The main revisions suggested were:

> Snakes which are poisonous in the swamps should be avoided.
>
> Poisonous snakes in the swamp should be avoided.

All agreed that two ideas were involved:

> Snakes in the swamps should be avoided.
>
> Some snakes are poisonous.

The thinking was that it is too wordy to repeat "snakes" in the same sentence, such as:

> Some snakes are poisonous and these snakes in the swamps should be avoided.

So a logical substitute, a WH-pronoun, could be used for the second "snakes," as in the first revised sentence:

> Snakes which are poisonous should be avoided in the

swamps.

An adjective-transformation could just as easily occur by deleting "snakes are," thus restricting "poisonous" as a modifier of "snakes," as in the second revision:

Poisonous snakes should be avoided in the swamps.

Some sentences in which students identified their own problems with WH and revised them accordingly are the following:

14. OLD--Helga and I carried a basket of bread to the Lutheran Home owned by Pastor Hanson and his wife which was surrounded by the town of Fallen Leaf Lake in Minnesota.

It sounds like the wife is surrounded by the town of Fallen Leaf Lake.

REVISED--Helga and I carried a basket of bread to the Lutheran Home which was surrounded by Fallen Leaf Lake in Minnesota and owned by Pastor Hanson and his wife.

David

15. OLD--The servants said that the owner of the house ordered them to close the room because it was her daughter's room who is now dead.

Who can only refer to people. It refers to the room in my sentence.

REVISED--The servants said that the owner of the house ordered them to close the room because the room had belonged to her daughter who is now dead.

Suzanne

16. OLD--When I was a little tot, my Mom and I often went over to Lucy's house, who was her dear friend.

The "who" is wrong somehow.

REVISED--When I was a little tot, my Mom and I often went to the home of her dear friend, Lucy.

Pat solved his "who" problem by eliminating it entirely and writing "Lucy" in apposition to "dear friend."

17. OLD--First John went over to Al's house who was the boy who took his place at halfback.

The house isn't the boy. Who can't refer to a house.

REVISED--First John went over to Al's house. Al was the boy who had taken his place at halfback.

Jim

Jim circumvented his relative pronoun problem by breaking down the original sentence into two sentences.

One very interesting sentence written by Chris was used for class discussion:

18. OLD--It is about a half-hour walking from here which is not too far.

Many revisions were suggested by the class:

REVISED--

a) The fact that it takes a half-hour to walk from here to there shows it's not too far.

b) It is about a half-hour walk which is not too far from here.

c) It is about a half-hour walk from here. This is not too far.

d) It takes about a half-hour to walk there from here, and that's not too far.

e) From here it is about a half-hour walk, which is not too far.

The only revision the majority of the class accepted as an improvement over the original sentence was (a). The best reason we could come up with to explain why these two ideas are difficult to connect is that both are facts of measurement that cannot be equated in the same sentence. The "half-hour" is a time measurement while the factor "not too far" shows distance. "Which" seemed incorrect then, since there was nothing it could refer to in the main sentence. Measurements of time and distance just don't mix, we concluded. Only by directly factivizing one measure and making it a cause for the other can the two facts be related most effectively.

"Which" is not the only pronoun that causes occasional problems. Personal pronouns are misused at times, but usually in only one way--the agreement in number of personal pronouns with their antecedents. Students seem to have no difficulty in identifying this problem simply because as they would say, "The sentence sounds better," when the correction is made. A few typical examples turned in with the proper corrections are these:

19. OLD--If you visit the places you study you will be more interested in it.

"It" should be plural because it refers to places.

REVISED--If you could visit the places you study you would be more interested in them.

David

David did not explain his insertion of the modals "could" and "would" in place of the modal "will." Sometimes one conscious correction will bring to light other revisions.

20. OLD--I think every girl, those who were chosen and those who weren't, really learned something from cheerleading tryouts.

"Those" is plural and girl is singular. I could revise it in two ways.

REVISED--

a) I think every girl, whether she was chosen or not, really learned something from cheerleading tryouts.

b) I think all the girls, those who were chosen and those who weren't, really learned something from cheerleading tryouts.

Joyce

The twofold revision in this last sentence shows that Joyce truly has a grasp of the problem in the original sentence.

21. OLD--When someone is as busy as she is, they shouldn't have such details to worry about.

I was writing about one person and all of a sudden made it plural. I could probably mention the person's name again to make more sense.

REVISED--When someone is as busy as Mrs. McFadden is, she shouldn't have such details to worry about.

Teri

Teri clarified the meaning of her sentence by providing the personal pronoun with a referent, thus eliminating the use of three pronouns in the sentence.

This last example leads into the third area of pronoun problems we explored, the ambiguity or lack of meaning of an unidentified pronoun. The problem varies with each sentence. Even though a pronoun is used and then is sometimes identified later in the sentence, the uncertainty is not always cleared up. Again, student sentences can serve as illustrations:

22. OLD--You can be educated in the finest of schools but if you don't live a real-life experience it won't help you.

It's not clear in the sentence what it is that won't help you.

REVISED--You can be educated in the finest of schools but if you don't live a real-life experience, you won't learn anything valuable.

Sally

Sally kept the "you" sequence of pronouns in the subject position in her revised sentence. This seems to lend a certain strength to the sentence that was lacking when the "it" clause was used at the end. It is possible for the reader to determine what "it" refers to; however, it should not be necessary to take the time to do this.

23. OLD--I think a family should have a pet because when they get older they will be acquainted with animals.

"They" shouldn't mean the whole family, just the children.

REVISED--I think a family should have a pet because when the children get older they will be acquainted with animals.

Mike

24. OLD--It shows by pictures how your hair will be.

The sentence sounds funny to me.

REVISED--These pictures show how your hair will look.

Bill

25. OLD--He took it and poured the scarlet solution over the tiny mouse.

The noun should come first and the pronoun second.

REVISED--He took the scarlet solution and poured it over the tiny mouse.

Jeannine

26. OLD--Immediately she went to her desk and handed me it to do over.

I didn't say who "she" is, but the sentence that comes before this one in the story does. I should say what "it" is.

REVISED--Immediately she went to her desk and handed me another reading paper to do over.

Dan

In sentence 23, Mike simply clarified what members of the family would become better acquainted with animals, while Bill in sentence 24 made a major revision. His revised sentence is much more direct and explicit in meaning. The verb change from "be" to "look" is a simple but subtle change since pictures reflect how something "looks," not how it actually "is." Jeannine in sentence 25 made a simple switch of the noun and pronoun from one place to the other that gives the pronoun a direct referent. In sentence 26 Dan simply explains what the "it" stands for, clearing up any possible ambiguity in the sentence.

Clarifying grammatical problems with pronouns is not so difficult as trying to gain an understanding of the use or misuse of "ing" verb phrases called "dangling participles." In the years spent working with students on this problem in a traditional grammar framework, I found that to concentrate on "who is doing what" seemed to be the best solution. Thus when the study of case in English came to light, I could see that the same relationship clarified and gave a better form to the ideas I had already been teaching. Consider a sentence Teri handed in, for example:

27. OLD--Speaking from personal experience, there is a great deal of value in informal education.

The sentence doesn't say whose personal experience it is. I meant to say that it was my own.

REVISED--Speaking from personal experience, I

> would say that there is a lot to be said for informal education.

This is a fairly typical example of the sentence with a dangling participle. If the students can recognize that there are two things said (or two ideas) in the sentence and that one is subordinated to the other by using an "ing" phrase, then part of the difficulty is solved. The same principle holds here that was evident in the discussion of the WH-transformation. In the latter case the relative pronoun needed to refer to a specific noun in a sentence. In this case the agent of the introductory "ing" phrase must also be the agent of the main clause. The "ing" phrase is then a reduced clause in which the agent and a form of BE are deleted, leaving the "ing" progressive form of the verb plus whatever follows the verb. The two separate ideas in Teri's sentence are:

> I would say that there is a great deal of value in informal education.
>
> I am speaking from personal experience.

Note that the agent is the same in both sentences. It is possible to apply a relative clause transformation in the second sentence, thus subordinating it to the first, but the agent of the action (or thought) must be explicitly stated and cannot be left out of the first sentence. This seems to be the most common error made concerning "ing" phrases.

Another recurring misuse of the "ing" phrase can be illustrated by one of Dan's sentences:

> 28. OLD--Picking up the red solution to pour into the mixture, his chemistry teacher, Amir Vlodoski, came into the room.
>
> REVISED--Tony was picking up the red solution to pour into the mixture when his chemistry teacher, Amir Vlodoski, came into the room.

Because the agent of the first sentence is "Tony" and the agent of the second sentence is "chemistry teacher" it is impossible to change either sentence to a reduced clause or an "ing" phrase. Dan did not comment on the sentence when he revised it. Subordinating one sentence to the other in a time relationship that is adverbial seemed to be the best solution for Dan. If he had thought of conjoining the sentences with "and" he rejected the idea in favor of the one used.

Strangely enough, the dangling participle did not appear often in the students' writing at all. The emphasis this problem has been given in the past in language-arts textbooks certainly seems to me to be out of proportion to its actual production by students.

Another type of sentence that students most often revised was the sentence that conveys unclear ideas because of repetition or excess words. Syntactically, such a sentence may be correct; but semantically it may be muddled or ambiguous. Therefore, it would be, in our sense, ungrammatical. No set type or pattern of sentence seems to fit into this category, yet each of these sentences used as examples, though unique, does illustrate the point to be made:

29. OLD--He could be bringing up his son what he thought was right but was wrong.

    The sentence doesn't say who thought he was wrong.

    REVISED--He thought he was bringing his son up right but the neighbors thought otherwise.

    Bill

When I talked to Bill about this particular sentence, he pointed out that he felt it was ungrammatical as well as ineffective in getting his point across to the reader. He wanted to convey the idea that the neighbors (of Steinbeck's Junius Maltby) strongly disapproved of the way Junius raised his son, even though Junius himself felt he was doing the right thing. In our discussion, Bill could not account for the use of "what" in the old sentence and, once he removed it, he felt freer to move the words about until he came up with the revised sentence.

30. OLD--Television is one thing that might keep a family apart because I think people wouldn't know what to do.

    This sentence doesn't say very well what I wanted to say.

    REVISED--Television might keep a family apart, but people wouldn't know what to do without it.

    Jeannine

This sentence is an even more obvious example of how clarifying the meaning through revision can change the meaning of the entire sentence. Jeannine's main point seems to be that families might drift apart because they view television so often, but doing without a television set still might not provide the only answer to the drifting apart. It is implied in the revision that deeper reasons might be the cause of the problem. Also, Jeannine left out "is the one thing that," which is not missed at all in the second sentence. Jeff made this same correction in one of his sentences:

31. OLD--That article was the thing that most changed my thinking.

REVISED--That article definitely changed my thinking.

Jeff

Jeff did not give a reason for his revision and, when I asked him, he told me that in the revision his point was made more directly than in the original sentence. Note that he too omitted the redundant "was the thing that" in favor of a more clear, direct approach, even though no grammatical error was present in the sentence.

32. OLD--Everyone you come in contact with, you have given a part of yourself in maybe giving them just a little piece of advice or just a smile.

The sentence seems just a little jumbled.

REVISED--To everyone you come in contact with, you give a part of yourself, whether it be a little piece of advice or just a smile.

Joyce

It's difficult to pinpoint in this sentence exactly what Joyce did to improve it. Perhaps a simple organization of ideas would be the best description. She changed the tense from a vague past to a very definite present and eliminated the second "giving" and the first "just." Certainly the revised sentence more clearly conveys her message.

33. OLD--On racial problems you do more discussing than just thinking about the problems.

This is ambiguous.

REVISED--You discuss racial problems with others more than you think about them on your own.

David

David's sentence, in its context, would no doubt take on added meaning. However, the revision takes away the ambiguity that he rightly sensed in the first sentence. The original sentence could be taken to mean that thinking does not enter into the discussing of racial problems. In the second sentence he clearly shows that "thinking" pertains to dialogue with himself and does not imply in any way that thoughtless discussions of the topic take place.

34. OLD--Her daughter died when she was around my age at that time and my mistress didn't want to remember anything about her.

The ideas are just strung together.

REVISED--My mistress didn't want to remember anything about her daughter who had died when she was about my age.

Suzanne

By a very effective use of tense, Suzanne organized well the main ideas contained in her sentence: first, that the mistress's daughter died when she was about the age of the speaker; and second, that the mistress didn't want to remember anything about her daughter. The speaker is speaking in the present about a past event (the mistress not wanting to remember the daughter) after an even earlier past event had taken place, namely, that the daughter had died. Using the past participle form of "die" along with "had," Suzanne clarified the time sequence of the past events. By not stringing the two ideas together with "and," Suzanne made the sentence more cohesive by determining the noun common to both sentences, "daughter," and subordinating one of the ideas to the other by using the relative clause transformation.

35. OLD--The field had a sudden silence when he walked out on the field.

I shouldn't have said "field" twice.

REVISED--There was a sudden silence when he walked out on the field.

Jim

It's difficult to imagine a field "having" a sudden silence. Usually something or someone is "being" silent. The use of "there was" retains the meaning of the original sentence.

36. OLD--We went to Saginaw, Michigan where there is a small lake with a few cottages around it. It's called Carp Lake.

REVISED--We stayed in a small cottage located on the shore of Carp Lake in Saginaw, Michigan.

Joe

This sentence is a good example of the successful identification and correction of redundancy, thus making the meaning even more clear to the reader.

37. OLD--It will teach them when they get older to be acquainted with having responsibility.

I could write the sentence in fewer words.

REVISED--It will teach them to be more responsible when they get older.

Mike

Mike does not identify what the "it" is, but no doubt the previous sentence clarified this point. The revised sentence sharpens the meaning of the first without changing the meaning in any way. To "be more responsible" carries much more force than to "be acquainted with having responsibility" does.

The fact that students can, in evaluating their own sentences, recognize syntactic or semantic problems that prevent the clearest communication of their idea is a worthwhile achievement. Specific grammatical errors, such as those previously considered, are sometimes easy to identify and correct, precisely because they are glaring errors. Not so with the above category of sentences. A student need not be a perfectionist in order to make the above observations and corrections, but he does need to be aware of certain principles, sensitive to his own ideas and confident that he can express them.

It often happens that students will identify for revision a sentence that has no particular grammatical deficiency. The meaning is clear, in contrast to the problem discussed above, but the sentence strikes the reader as lifeless and dull. These sentences make up a category of their own. Students will label them as lacking in description or activity and, in a revision, can often produce some very fine results. A student also can discover something about his own style of writing when he begins to notice the same dull patterns over and over again. For example, after identifying what she called sentences that lacked description, Tammy discovered that she always began an opinion essay in the same way. One day she made a point of going through all of her essays at the same time, copying each beginning sentence and then revising it. She handed in all of this work as an independent study activity. Since then, her topic sentences have been creative and anything but dull. A few of Tammy's original beginning sentences are these:

38. OLD--Yes, I think a family needs a pet.

39. OLD--A lot of people are bothered by this expression.

40. OLD--I think an informal education is sometimes better than a formal education.

41. OLD--I think Richard Cory and Daisy are alike.

Both of the first two sentences all proceed directly from the title of the essay. Sentence 39 depends entirely upon the title for its meaning, while sentence 38 at least restates the question by answering it. Originally, Tammy had titled each of these essays with a question, so of course the answers came logically and easily to her. For example, since the title of 39 was "What Will Other People Think?" Tammy had thought that her opening statement was a very fine, general comment on the title as well as a good way to begin. The "Yes" in sentence 38 Tammy identified as unnecessary. Sentences 40 and 41 were at least acceptable, she felt, since they stated her position unequivocally, though in an uninteresting fashion. Tammy's following revisions I consider to be fine examples of a student's effort to climb out of the lifeless sentence rut on his own, and try to add interest to his sentences:

38. OLD--Yes, I think a family needs a pet.

REVISED--I think it would be a good thing if every family had a pet.

39. OLD--A lot of people are bothered by this expression.

REVISED--Many people in this world, when they want to do something, are bothered by the fear of what others may think.

40. OLD--I think an informal education is sometimes better than a formal education.

REVISED--An informal education offers many opportunities that a formal education cannot give.

41. OLD--I think Richard Cory and Daisy are alike.

REVISED--Richard Cory in the poem we just studied seems to have a lot in common with Daisy, the main character of "A Start in Life."

Again, the greatest value I can see in the above revisions is that the student identified the problem she felt needed improving and went ahead on her own in revision. It is not impossible to predict that such insight, nurtured at this early age, could only result in clearer, more logical thinking and writing as the student grows in learning.

Another sentence that lacked description was one of Bob's:

42. OLD--He had big eyes and a brown coat.

Not enough description.

REVISED--He had big sad eyes, a brown coat, a stubby tail, and white spots on his feet that looked like stockings.

In his revised sentence Bob expanded the physical description so that the dog could be pictured as a unique little being. Bob's comment, "Not enough description," was an accurate one. Another similar sentence was Jim's:

43. OLD--They started straight in at preparing the meal.

This sounds too much like slang and there isn't any slang in the rest of the essay. No description.

REVISED--The women went straight to the kitchen, and started preparing the meal.

A few descriptive details were supplied by Jim (the women and the kitchen) that concretized the situation. His comments about slang are interesting, for he recognized that there are certain times (see next section) when slang can be used to maximum effect. Would Mark Twain be esteemed today if slang were a forbidden form of written language? The main point here is, however, that Jim did supply a few pieces of added description on his own.

44. OLD--A dog, if it was big enough and alert enough, could be a watchdog.

Too much repetition in this sentence.

REVISED--If you have a fairly alert and good-sized dog, he could be used as a watchdog.

Dan

The use of "enough" in this sentence is eliminated entirely in

Dan's revision. "Big" was changed to the more descriptive "good-sized" and "used as" was added after "could be" to imply more clearly that the dog could be a watchdog for some person who keeps the dog for that purpose. The structure of the entire sentence was improved, it seems to me, by the use of the direct if-then sequence: If you have . . . , then he could be . . . . Since the "then" clause is passive, the agent "by you" is implied at the end. "Then" is not expressed but is logically a part of the sentence.

None of the above sentences was actually grammatically incorrect. Their meanings were clear in the original versions, though with added description, meanings were expanded and identified more sharply. None of the revisions constitute what a teacher would consider spectacular sentences; however, the one point remains that needs to be stressed: the students themselves were able to improve their own sentences with interest and insight. In my opinion, this is one of the best and most basic skills a writer can possess.

The final sentences to be discussed here are, in a sense, the most interesting ones. These are sentences that revealed unusual structure or meaning and led class discussion into interesting ways of thinking. Without these sentences, we would not have been able to consider particular grammatical points in exactly the same way. Some of the sentences I shall list at the end of this section are those handed in by the students themselves as interesting or unusual sentences to be considered in class discussion. I cannot include every sentence we discussed or every sentence handed in, but as in the previous sections, I will try to present a fair sampling of them.

One of these interesting sentences was from Jeff's essay on the value of having a pet in the family:

45. Often neglect could lead to dead pets.

Labeling the parts of this sentence became a major task the more we got into it. We found that the agent or doer was missing so we called the agent "somebody." Somebody's action was that of "neglecting," although we finally labeled this a non-action verb. "Could" puts the entire activity into the realm of possibility. "Lead to" suggests causality, so we set up the relation: A could cause B. Part A was determined already, "somebody neglects," and it remained to write in the result, or B. We had spoken in times past of the essential verbal qualities of adjectives and at this time, one of the students offered this point for consideration again. "Dead pets" is what you have after "pets die," he stated. The "pets dying" is the direct result of the neglect, it seemed to him, so he suggested putting "pets" in a reactive position. The sentence finally emerged as one revealing a causal relationship in the realm of possibility where a particular activity (or non-activity) could cause another action to take place. The sentence on the board looked like Figure 5:

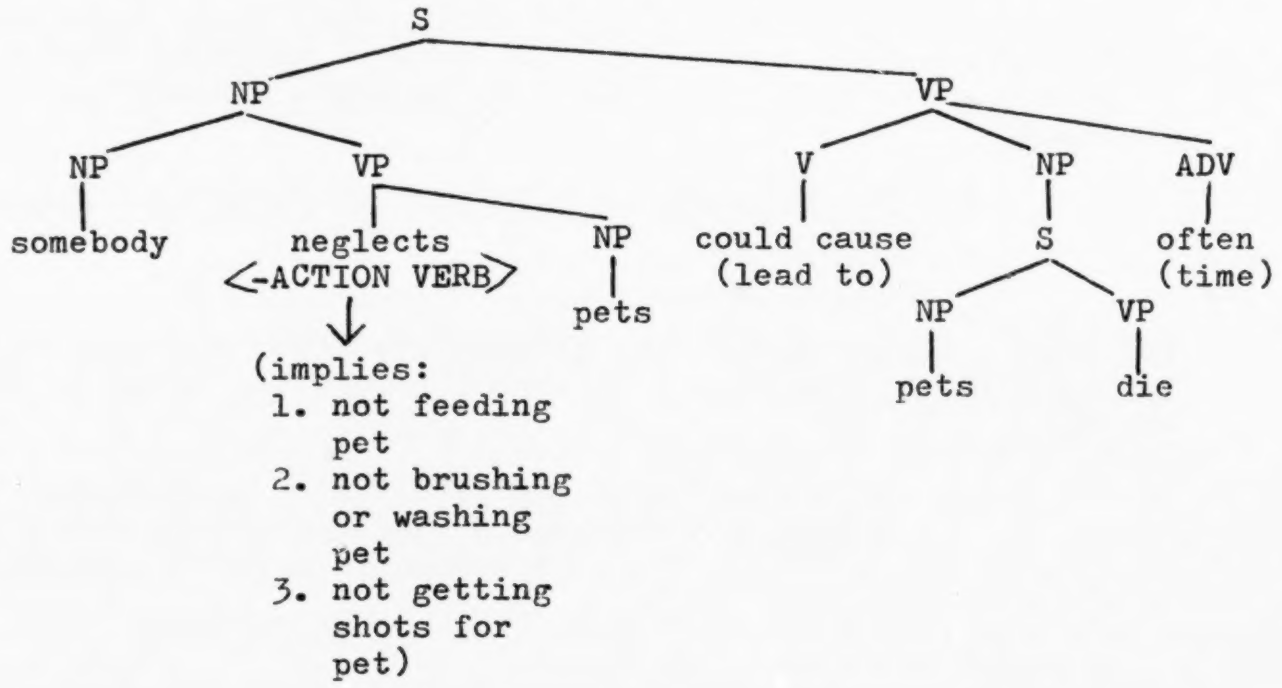
S
NP
VP
NP
VP
V
NP
ADV
somebody
neglects
<-ACTION VERB>
NP
pets
(implies:
1. not feeding pet
2. not brushing or washing pet
3. not getting shots for pet)
could cause
(lead to)
S
NP
VP
pets
die
often
(time)

Figure 5

What "neglect" implied was stipulated so that the meaning could come through even more clearly. "Often" is the qualifying adverb of time that fits in with the whole notion of possibility. This type of exploration of a sentence seems to be very satisfying to students who are trying to perceive grammatical relationships.

The sentences submitted by students for class discussion were varied indeed. Some were clever and funny, others deep and serious. I will list a few here, commenting on what I would consider to be their potential value in group discussion:

> 46. I really don't like those self-taught educations sometimes, because people don't do it that good.
>
> Dan

Dan, in an ironic essay on the value of an informal education, used slang to good advantage here. Does he say what he means in the context of the whole essay?

> 47. If I meet two friends and one of them is in a

rotten mood, I can't walk up to him and say, "$E=mc^2$." He'd look at me and probably faint, while if I'd walk up to him and say, "Hey, man, what's got your gourd?," he would respond with "My old lady's on my back."

Jeff

Jeff is pointing up the value of saying what needs to be said at the time--slang expressions can make an informal situation or problem more easy to discuss, he implies in these two sentences.

48. The fire spread like a flash flood in a Fizzy factory.

Dan

Not only a clever simile but also alliteration captures Dan's interest in this sentence. A verbal comparison would be interesting.

49. We plunged into the puzzle with perseverance and promptly discovered a blend of spices that perfectly paired the Piper's pickled peppers.

Sally

Again, alliteration adds a unique quality to the sentence.

50. The window shade shuddered when Ned gave his death stare.

Jim

An excellent way to reinforce the concept of personification would be a discussion of this particular sentence.

51. Two boys are lying on soft green grass watching a yellow-green caterpillar climb his way up a big dark tree.

Jim

The cool, restful feeling in this sentence is achieved through descriptive words of color, "green," "yellow-green," "dark" and words of quiet, "lying," "soft," "watching."

52. If you've been feeling low lately, try a pair of Dr. Scholl's Elevator shoes.

Tammy

The cleverness of the ambiguity would enable students to re-write two deep structures for this sentence.

53. She made me realize that religion was not the study of facts as in a Baltimore Catechism but the realization of the love of people.

Sally

The contrast of the two words, "study" and "realization," is strong when applied to a discussion of religion and its meaning in one's life. Word meanings would be important in a discussion of this sentence.

54. People in the streets did not look upon Richard Cory as a person but as a goal they wanted to reach.

Chris

The use of the word "goal" applied to a person in this sentence emphasizes the concept of inhumanity and de-personalization that Chris implies. Richard Cory as a person (based on the poem) and the goals of the people would be excellent beginning ideas for discussion.

55. In my opinion our minds are one large battlefield scarred with the many battles of emotion.

Jeff

Jeff was prone to writing sentences of this type in which he made many different types of metaphorical comparisons between activities of the mind or emotions and activities of the body. A collection of several of these would make an interesting study in itself.

Many more examples could be given to show that a wealth of grammatical study lies in the work of the students themselves. A teacher need go no farther than his own students to find ample material for a year's language program, provided he knows how to use the material to the students' best advantage. Selection and preparation are key factors in handling this type of material. The more a teacher himself thinks about sentences, the more he can influence students to think about them.

The focus of a writing program should center on helping the student to help himself say what he wants to say just the way he wants to say it. In these pages I have tried to share the efforts my students and I made to accomplish this end. We felt at the end of two years that we had succeeded in accomplishing our objective--for all of us had the objective in mind throughout the two years. What they do with any new insights or sensibilities they have gained (in varying degrees) is up to them and to their teachers in future years. I think that each student has become interested in and capable of using more effective written communication. Prodding and guidance are always necessary at certain points to help the student develop his writing ability.

What can a teacher do? After four years of intense initiation, I feel that I am just beginning to grasp what it means to teach the use and meaning of one's native language to young native speakers. I shall continue to read innovative material from various sources and continue to develop new approaches as the needs of individual classes arise. This is the same advice I would give to anyone who asks, "Where do I begin--I who have no background or experience?" My questions would be--"Do you want to understand better what your native language can mean to you and to share these insights with your students? Can you respect the students' level of achievement, no matter what it is, yet always encourage these students in every way? Do you like to read and to think about new things? Can you live in a changing educational atmosphere, in which what lies ahead is uncertain and even vague? Do you like adventure and, above all, a challenge?" If your answers are "yes," then I would advise you to act on your belief in your classrooms. Language is a gift, a treasure filled to overflowing with the expression of your ideas, and indeed, your very own self. Enjoy it with your students.

REFERENCES

1. Holt, John. How Children Fail. New York: Pitman Publishing Corporation, 1968.

2. Bateman, Donald R., and Zidonis, Frank J. How Grammatical Sentences Are Formed: A Manual For Studying a Generative Grammar of English. Cooperative Research Project #1746, The Ohio State University and U.S. Office of Education, Department of Health, Education and Welfare, October, 1964.

3. Zidonis, Frank J. "A Transformational Grammar for Secondary English Classes," The Ohio State University, 1966. (Mimeographed.)

4. Jacobs, Roderick A., and Rosenbaum, Peter S. Grammar I and Grammar II. Boston, Massachusetts: Ginn and Company, 1967.

5. Fillmore, Charles J. "The Case for Case." Universals in Linguistic Theory. Edited by E. Bach and R. J. Harms. New York: Holt, Rinehart, and Winston, 1968.

6. Shroyer, Thomas G. "An Investigation of the Semantics of English Sentences as a Proposed Basis for Language Curriculum Materials." Unpublished Ph.D. dissertation, The Ohio State University, 1969.

7. Craig, William E. "Investigation of Syntactic-Semantic Relationships in the Selected Writing of Secondary School Students." Unpublished Ph.D. dissertation, The Ohio State University, 1970.

8. Hall, Donald. "Digging." A Roof of Tiger Lilies. New York: The Viking Press, 1964.

9. Hans, Marcie. "Fueled." Reflections on a Gift of Watermelon Pickle . . . and Other Modern Verse. Edited by Stephen Dunning, Edward Lueders, and Hugh Smith. Glenview, Illinois: Scott, Foresman and Company, 1966.

10. Steinbeck, John. The Red Pony. Cleveland, Ohio: The World Publishing Company, 1948.

11. Stewart, John B. *Repetitive Advertising in Newspapers*. Boston, Massachusetts: Harvard University, Division of Research, Graduate School of Business Administration, 1964.

12. Muller, Herbert J. *The Uses of English*. New York: Holt, Rinehart, and Winston, 1967.

13. Moffett, James A. *A Student-Centered Curriculum, Grades K-13: A Handbook for Teachers*. New York: Houghton Mifflin Co., 1968.

14. __________. *Teaching the Universe of Discourse*. New York: Houghton Mifflin Co., 1968.

15. Vendler, Zeno. *Linguistics in Philosophy*. Ithaca, New York: Cornell University Press, 1967.

16. Doyle, (Sir) Arthur Conan. "The Adventure of the Sussex Vampire." *The Complete Sherlock Holmes*. New York: Garden City Publishing Company, Inc., 1938, pp. 1218-1230.

17. Clemens, Samuel L. (Mark Twain). *The Adventures of Huckleberry Finn*. *The Family Mark Twain*. New York: Harper & Brothers, 1935.

18. Frank, Anne. *The Diary of a Young Girl*. Translated from the Dutch by B. M. Mooyart-Doubleday. Garden City, New York: Doubleday & Company, Inc., 1952.

19. Faulkner, William. "Barn Burning." *Reading Modern Short Stories*. Chicago: Scott, Foresman and Company, 1955, pp. 223-239.

20. Hemingway, Ernest. *The Old Man and the Sea*. New York: Charles Scribner's Sons, 1955.

APPENDIX

This list of case relationships was drawn up and illustrated by the students during their first year (grade 7), following inquiry sessions and sentence analyses. As a teacher, my preparation consisted of knowing the theoretical explorations into English case grammar made by project directors and associates.

1. AGENTIVE -- animate initiator of the action.

A A
The boy mowed the lawn. The lawn was mowed by the boy.

2. INSTRUMENTAL -- inanimate object or thing that the agent uses to initiate the action.

INST
John used a knife to cut the meat.

John cut the meat with a
INST
knife.

3. OBJECTIVE -- animate or inanimate receiver of the action that is affected by the action.

O O
The boy mowed the lawn. The lawn was mowed by the boy.

4. REACTIVE -- inanimate reactor.

R R
The boy bounced the ball. The ball bounced.

5. PATIENTIVE -- animate responder.

P P
John surprised Maureen. Maureen screamed.

6. GENITIVE -- animate source of the created object or of the transferred object.

G G
John painted a picture. John gave a gift to Maureen.

7. CREATED OBJECT -- object or thing that comes into being because of the action of the Genitive.

C O C O
John painted a picture. The picture was painted by John.

8. TRANSFERRED OBJECT -- object or thing transferred from the Genitive to the Dative.

T O T O
John gave a gift to Maureen. John gave Maureen a gift.

9. DATIVE -- animate receiver of the transferred object; also called the indirect object.

D D
John gave a gift to Maureen. John gave Maureen a gift.

10. LOCATIVE -- where the action takes place.

LOC
John is typing in his room.

11. POSSESSIVE -- owner of the possessed object.

POS POS
John owns two hats. That book belongs to Maureen.

12. POSSESSED OBJECT -- animate or inanimate object that is possessed.

P O P O
John owns two hats. That book belongs to Maureen.

BIBLIOGRAPHY

The following bibliography contains books and materials I have used and referred to often during the past four years:

BACKGROUND: EDUCATION AND CHANGE

Ashton-Warner, Sylvia. Teacher. New York: Bantam Books, 1963.

Berman, Louise M. The Humanities and the Curriculum. Washington, D.C.: NEA Publications, 1965.

Bruner, Jerome S. On Knowing: Essays for the Left Hand. New York: Atheneum, 1967.

__________. The Process of Education. New York: Random House, 1960.

Hoffer, Eric. The Ordeal of Change. New York: Harper and Row, 1963.

__________. The True Believer. New York: Harper and Row, 1951.

Holt, John. How Children Fail. New York: Pitman Publishing Corporation, 1968.

__________. How Children Learn. New York: Pitman Publishing Corporation, 1967.

Kohl, Herbert R. Teaching the Unteachable. New York: New York Review Publication, 1967.

BACKGROUND: GENERAL IDEAS IN TEACHING OF ENGLISH

Burton, Dwight L., and Simmons, John S. Teaching English in Today's High Schools. New York: Holt Rinehart and Winston, Inc., 1965.

Gordon, Edward J. Writing and Literature in the Secondary School. New York: Holt, Rinehart and Winston, Inc., 1965.

Guth, Hans P. English Today and Tomorrow. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964.

Holbrook, David. The Exploring Word. Cambridge: Cambridge University Press, 1967.

Loban, Walter, et al. Teaching Language and Literature. New York: Harcourt, Brace and World, Inc., 1961.

Wolfe, Don M. Creative Ways to Teach English. New York: The Odyssey Press, 1958.

Periodical publications of the National Council of Teachers of English.

TEACHING LITERATURE AND POETRY

Carlsen, G. Robert. Books and the Teen-Age Reader. New York: Harper and Row, 1967.

Dunning, Stephen. Teaching Literature to Adolescents: Poetry. Chicago: Scott, Foresman and Co., 1966.

Dunning, Stephen, et al., ed. Reflections on a Gift of Watermelon Pickle. New York: Scholastic Book Services, 1966.

Fader, Daniel N., and Schaevitz, Morton H. Hooked on Books. New York: Berkley Medallion Books, 1966.

Henderson, Harold G. Haiku in English. New York: Japan Society Inc., 1965.

Molloy, Paul, ed. Poetry U.S.A. New York: Scholastic Book Services, 1968.

MacLeish, Archibald. Poetry and Experience. Baltimore: Penguin Books Inc., 1960.

Ryan, Margaret. Teaching the Novel in Paperback. New York: The Macmillan Company, 1963.

Sweetkind, Morris. Teaching Poetry in the High School. New York: The Macmillan Company, 1964.

Thurston, Jarvis A. Reading Modern Short Stories. Chicago: Scott, Foresman and Co., 1955.

TEACHING COMPOSITION

Goodman, Theodore. The Writing of Fiction. New York: Collier Books, 1961.

Leavitt, Hart D., and Sohn, David A. Stop, Look, and Write. New York: Bantam Books, 1964.

Moffett, James. A Student-Centered Language Arts Curriculum, Grades K-13: A Handbook for Teachers. New York: Houghton Mifflin Co., 1968.

________. Teaching the Universe of Discourse. New York: Houghton Mifflin Co., 1968.

Read, Herbert. English Prose Style. Boston: Beacon Press, 1952.

American Education Publication: Read magazine.

TEACHING LANGUAGE AND GRAMMAR

Anderson, Wallace L., and Stagebert, Norman C. Introductory Readings on Language. New York: Holt, Rinehart and Winston, 1962.

Bach, Emmon. An Introduction to Transformational Grammars. New York: Holt, Rinehart and Winston, 1964.

Chomsky, Noam. Cartesian Linguistics. New York: Harper and Row Publishers, Inc., 1966.

Curme, George O. English Grammar. New York: Barnes and Noble Inc. (College Outline Series), 1947.

Cutler, Charles. The English Language: from Anglo-Saxon to American. Middletown: American Education Publications, 1968.

Gleason, H. A. An Introduction to Descriptive Linguistics. New York: Holt, Rinehart and Winston, 1955.

Jacobs, R. A., and Rosenbaum, P. S. Grammar I and II. Boston: Ginn and Co., 1967.

Jespersen, Otto. Growth and Structure of the English Language. New York: Macmillan Co., 1948.

________. *Language, Its Nature, Development and Origin.* New York: W. W. Norton & Co., 1964.

Laird, Charlton. *The Miracle of Language.* New York: Fawcett Publishing Co., 1953.

Lodwig, Richard R., and Barrett, Eugene F. *The Dictionary and the Language.* New York: Hayden Book Co., 1967.

Potter, Simeon. *Language in the Modern World.* Baltimore: Penguin Books, 1960.

Roberts, Paul. *English Syntax.* New York: Harcourt, Brace & World, Inc., 1964.

Thomas, Owen. *Transformational Grammar and the Teacher of English.* New York: Holt, Rinehart and Winston, Inc., 1965.

Publications of the National Council of Teachers of English:
"Toward a New Rhetoric" (October 1963 CCCO)
"Leaflets on Historical Linguistics"